

DEVICE AND SYSTEM FOR SECURING A SHELF ACCESSORY

Field of the invention

5 The present invention relates to a device for securing the rear end of a shelf accessory to a shelf. The invention also relates to a system for securing a shelf accessory to a shelf, which system comprises such a device. The invention is especially well suited to the
10 securement of shelf dividers, feed devices and other shelf accessories for use with shop shelves.

Background of the invention

In general stores, for example, goods are often
15 displayed on shelves. In order to improve the display of the goods and facilitate the loading and unloading of the goods, a host of different accessories, such as shelf dividers, various types of feed devices, and various types of product trays, etc. are used. Such
20 accessories are often fixed to the shelves.

According to the prior art, the accessories can be fixed to the shelf in a number of different ways, for example mechanically with screws or the like, by snap
25 fastening or by adhesion with double-sided adhesive tape or the like.

The arrangements which are used to fix the accessories to the shelves should have some basic properties. One
30 important property is that it should be possible to fix the accessories in arbitrary positions along the length of the shelf, so that the distances between the accessories can be made arbitrarily long to fit different packagings and quantities of goods. In
35 addition, the accessories should be firmly secured to the shelf to prevent them from being inadvertently removed or displaced from their intended positions.

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The securement of the accessories should also ensure that they stand steady, so that they do not tilt. In this context, it is of great importance that firm securement is ensured, at the same time as the securing arrangement allows the accessories to be easily fastened and removed.

The accessories should be secured to the shelf both at its front and rear end in order to prevent either end of the accessory from being lifted from the shelf. Particularly if the accessory comprises a front plate or front stop plate against which the goods rest, for example on a sloping shelf or a feed device, the force of the goods upon the front plate produces a turning moment upon the accessory, which endeavours to lift the rear portion of the accessory from the shelf. Such lifting of the rear end of the accessory is naturally undesirable, since it can cause disarray on the shelf and can result, moreover, in the front end of the accessory being turned out of its engagement with a front securing device, in which case both the accessory and the goods can fall down from the shelf.

A desired property is that it should be possible with a single manoeuvre to arrange a shelf by first fitting the desired number of accessories to the shelf and then displacing them along the shelf into the definitive position of the respective accessory, so as finally to fix the accessories in these positions.

Even once the shelf is arranged and the shelf dividers are placed in their respective positions, it is sometimes necessary to reorganize the shelf, with one or a few shelf dividers having to be moved, taken away or fastened. This is the case, for example, when the distance between two shelf dividers has to be adapted to a new product or product packaging of different dimensions. In order to facilitate such reorganization of parts of an already arranged shelf, it is therefore

desirable that individual accessories can be displaced along the shelf into a new position.

5 In the arrangement of a new shelf and in the reorganization of an already arranged shelf, it is desirable to be able to displace the accessories along the shelf by taking hold of just the front edge of the accessory and shifting the entire accessory by guiding the front edge in either direction. This eliminates the
10 need to reach one arm and the hand in towards the rear end of the accessory so as simultaneously, with both hands, to displace both ends of the accessory along the shelf. Such simultaneous displacement of both ends of the accessory is both strenuous and ergonomically
15 disadvantageous and complicated to perform, especially if the distance between shelves arranged one above the other is small and if goods present on the shelf make access to the rear end of the accessory difficult.

20 In addition, the arrangements for the securement of the accessories should be aesthetically appealing, should not unnecessarily prevent loading or unloading of goods onto or from the shelf or adjoining shelves, and should be simple and cheap to produce and assemble.

25 It is desirable, moreover, that the arrangements for securing accessories to a shelf can be directly applied to pre-existing shelves without the need to exchange or adapt these existing shelves.

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Prior art

DE 299 02 933 U1 describes a device for securing a shelf divider. The shelf divider comprises at its front and rear end mutually pretensioned jaws, which can
35 grasp a front and a rear T-rail. In order to allow displacement of the shelf divider along the shelf, both the front and rear jaws are required to be separated by the application of a separation force to a purpose-built member disposed on the front and rear jaws. It is

therefore necessary to reach in to the rear end of the divider in order to allow the decoupling and displacement of the divider.

5 WO 03/005862 A2 and US 5,803,276 describe systems for the securement of shelf accessories. In these systems, the rear end of the accessories is held fixed to the shelf by means of snap-fastening engagement with a rail jutting up from the shelf. In these systems, too, it is
10 necessary to reach in to the rear end of the shelf accessory in order to obtain the release of the rear end and thus allow displacement of the accessory.

WO 2005/084498 describes a system for the securement of
15 shelf accessories, in which system the rear end of the accessory has a first hook which engages with an oppositely directed second hook disposed on the shelf. The second hook is configured as a profiled element extending in the longitudinal direction of the shelf.
20 With this system, securement of the rear end of the shelf accessory is obtained in the direction perpendicular to the shelf plane. On the other hand, this solution offers no securement of the rear end of the accessory in the longitudinal direction of the
25 shelf.

Summary of the invention

One object of the invention is to provide an improved device for securing the rear end of an accessory to a
30 shelf.

Another object is to provide such a device which allows simple repositioning of the accessory, at the same time as the rear end of the shelf accessory, in the
35 assembled state, is firmly secured in all directions.

Yet another object is to provide such a device which is simple and relatively cheap to produce and easy to use with different types of shelves.

These and other objects are achieved with a device of the kind which is defined in the preamble to Patent Claim 1 and which has the special technical features
5 defined in the characterizing part of the claim. The device according to the invention is configured to secure the rear end of a shelf accessory to a shelf. The device comprises an elongated profiled element, which is configured for fixing on top of a shelf,
10 substantially parallel with the shelf longitudinal direction. The profiled element has along its full length a substantially constant cross-sectional profile, with a lower base plate, a first arm projecting up from the base plate and a second arm
15 projecting out from the first arm. According to the invention, the device further comprises a friction rail, which is made of an elastic material and which extends along substantially the full length of the profiled element and projects downwards from the second
20 arm.

By virtue of the friction rail disposed on the second arm, firm securement of the rear end of a shelf accessory is ensured, which shelf accessory has at its
25 rear end a corresponding engagement member, in the direction both up from the shelf and in the longitudinal direction of the shelf. The corresponding engagement member of the shelf accessory can be constituted by any forward-projecting member which can
30 be inserted between the second arm and base plate of the device. The friction rail, through frictional interaction with this engagement member, allows a friction force between the device and the engagement member which is sufficient to prevent displacement of
35 the rear end of the accessory along the profiled rail under normal use. At the same time, the device allows very simple repositioning of the shelf accessory by grasping the front end of the accessory, displacing the accessory somewhat in the rearward direction, such that

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the engagement member is freed from frictional engagement with the friction rail, and then displacing the entire accessory in the longitudinal direction of the shelf. It is thereby possible to fix, remove and
5 reposition a shelf accessory, without needing to reach in over the shelf so as there to grip some part of the shelf accessory or the rear securing device.

The friction rail is expediently disposed on the free
10 end of the second arm. The device can thereby be configured with a small dimension perpendicular to the longitudinal direction of the profiled element and can at the same time ensure satisfactory securement of the accessory in the direction perpendicular to the shelf
15 plane.

The friction rail is expediently arranged substantially parallel with the first arm and substantially perpendicular to the base plate and the second arm. A
20 relatively high degree of deformation of the friction rail, and thus a high friction between the device and the accessory, is thereby afforded, at the same time as the friction rail can be given small cross-sectional dimensions.

25 The friction rail expediently extends down from the second arm by a distance corresponding to around half the height of the first arm. Good frictional interaction between the device and the shelf accessory
30 is thereby obtained, at the same time as the engagement member of the shelf accessory is allowed to be easily brought into frictional engagement with the device.

A double-sided adhesive tape is expediently disposed on
35 that side of the base plate which is facing away from the first arm, for fixing the device to a shelf.

The invention also relates to a system for securing a shelf accessory to a shelf, as defined in Claim 6.

Brief description of the figures

An illustrative embodiment of the invention is described below with reference to the appended figures,
5 whereof:

Fig. 1 is a perspective view of a system for securing a shelf accessory to a shelf according to the invention, when the system is disposed on a shelf;

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Fig. 2 is a plan view from the side, on an enlarged scale, of a device for securing the rear end of a shelf accessory, which device constitutes a part of the system shown in Fig. 1.

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Fig. 3 is a perspective view of a rear part of the system shown in Fig. 1, when the shelf accessory is in a first position.

20 Fig. 4 is a perspective view corresponding to that in Fig. 3 and shows the shelf accessory in a second position.

Detailed description of embodiments of the invention

25 In the following description, directional and positional terms, such as up, down, forwards, rearwards, over, below, in front of, behind, upper, lower, front and rear, are used. These terms relate to directions and positions of a horizontal shelf or
30 components when they are fixed to such a shelf. By the front edge of a shelf is here meant that edge of the shelf which is facing towards a person during normal use of the shelf. The terms are used to lend increased clarity to this description and should not be regarded
35 as limiting for the scope of protection.

Figure 1 shows a shop shelf 1 of standard type with a system according to the invention. The top side of the shelf defines in conventional manner the shelf plane,

which in the shown example is horizontal. The invention is not limited, however, to horizontal shelves, but can also advantageously be used with shelves whose shelf plane has an angle to the horizontal plane. The shelf 1
5 is provided with a front securing device 2 for securing an arbitrary number of accessories 3, which accessories form part of the system. In the shown example, the accessories are constituted by shelf dividers. It will be appreciated, however, that the accessories can also
10 be constituted by, for example, feed devices, trays or other accessories, which should be fixed to both their front and their rear ends. The front securing device 2 comprises an elongated profiled element with a rail projecting upwards from the shelf, which rail has a T-
15 shaped cross section. The front securing device 2 is fixed to the front end of the shelf 1 with double-sided adhesive tape. A front securing member 4 of each accessory 3 is snap-fastened around the T-shaped rail.

20 The system comprises, in addition to the accessories 1 and the front securing device 2, also a device 5 for securing the rear ends of the accessories 3. This device 5 is constituted by an elongated profiled element 6 and a strip of double-sided adhesive tape 7
25 (Fig. 2), with which the profiled element 6 is fixed to the shelf close to the shelf rear edge and parallel with the longitudinal direction of the shelf 1. The accessories 3 have on their rear ends a rear engagement portion, which is engaged with the profiled element 6
30 such that movement of the rear end of the accessory 3 in the direction up from the shelf plane is limited.

In Figure 2, the device 5 is shown in a side view. The device 5 comprises the elongated profiled element 6 and
35 a strip of double-sided adhesive tape 7. The elongated element 6 comprises a base plate 8, to whose bottom side the tape 7 is fixed. The tape 7 can conventionally be provided with a protective film (not shown), which is applied to the side facing away from the base plate

8 and is removed prior to mounting of the base plate 8 on the top side of the shelf. A hook 9 extends upwards from the base plate 8. The hook 9 comprises a first arm 9a, which juts up perpendicularly from the base plate 8. A second arm 9b of the hook extends in one direction from that end of the first arm 9a which is facing away from the base plate 8. The angle between the first 9a and second arm 9b is somewhat less than 90°, so that the second arm 9b slopes gently towards the base plate 11 in the direction away from the first arm 9a. The first arm 9a and second arm 9b are joined by means of a curved portion 9c. The free end of the second arm 9b has a curved end face 9d. According to a preferred embodiment of the invention, the device 5 is mounted on the shelf such that the hook 9 is rearward-facing, i.e. the curved end face 9d is facing towards the rear edge of the shelf.

The device 5 also comprises a friction rail 10, which is made of an elastic material and projects from the free end 9d of the second arm 9b in the direction of the base plate 8. The friction rail 10 constitutes a part of the profiled element 6. The base plate 8 of the profiled element 6, as well as the first 9a and second arm 9b, are formed from conventional PVC, whilst the friction rail 10 is formed from softened PVC. The profiled element 6 is expediently produced by co-extrusion of these two materials, which gives a simple and relatively cheap production of the device 5.

In Figs. 3 and 4 is shown a rear portion of one of the accessories shown in Fig. 1. The accessory 3, which constitutes a shelf divider, comprises a divider wall 31 which, in the assembled state, extends perpendicularly up from the shelf plane. On the rear portion of the divider wall 31, the divider wall has a number of material reductions 35 perpendicular to the longitudinal direction of the divider wall, which constitute weak links. With the aid of these weak

links, the divider wall can easily, by breaking, be cut on the spot to the desired length. In the rear, lower corner of the divider wall 31, a rear engagement portion 32 is formed in one piece with the divider wall 31.

The divider wall 31 here has a lower, rear cutout 33. The engagement portion 32 comprises a forward-facing hook 34 jutting down from the divider wall 31. The hook 34 comprises a first part 34a, which juts downwards from the divider wall 31, and a second part 34b, which juts forward from that end of the first part 34a that is facing away from the divider wall. The second part 34b projects substantially perpendicularly forwards from the first part 34a. A corresponding engagement portion 32' is arranged directly in front of each material reduction 35, so that the divider wall will have an engagement portion in its lower, rear corner for each length of the divider wall to which it is cut by means of rupture at a material reduction 35.

Fig. 3 shows the shelf accessory 3 when this is in the assembled state shown in Fig. 1. The front securing member 4 of the accessory 3 is here snap-fastened around the T-shaped rail of the front securing device 2. The rear engagement portion 32 of the accessory 3 is in engagement with the device 5. The second part 34b of the hook 34 of the accessory 3 lies with its downward-facing side up against the base plate 8. The height of the second part 34b and the height of the friction rail 10 are mutually matched, so that the elastic friction rail 10 is somewhat deformed when the hook 34 of the accessory is inserted in the hook 9 of the device 5. Friction is hereupon generated between the friction rail 10 and the second part 34b of the hook 34 of the accessory, which friction prevents the rear end of the accessory from being displaced along the profiled element of the device 5. At the same time, the second part 34b, in mechanical interaction with the second arm

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9b of the hook 9 of the device, prevents the rear end of the accessory from being lifted in the direction away from the shelf plane. A firm securement of the rear end of the accessory to the shelf, in the assembled state, is hereby achieved.

Fig. 4 shows the accessory 3 when the front securing member 4 has been released from the T-shaped rail of the front securing device and the accessory has been pushed back a little bit. This release and rearward displacement can be easily achieved by gripping the accessory by its front end and subsequently first lifting and then pushing the accessory somewhat to the rear. Once the accessory has assumed the position shown in Fig. 4, the hook 34 of the accessory is wholly disengaged from the hook 9 of the device 5 and the friction rail 10. The shelf accessory can then easily be either taken off, or displaced in the longitudinal direction of the shelf into a new desired position in which it is refixed to the shelf. As will be appreciated, such removal or displacement of the shelf accessory can be easily carried out by simply gripping the shelf accessory 3 by its front end, and thus there is no need to reach in over the shelf so as there to grip the rear end of the accessory or some part of the device 5.

The invention should not be deemed to be limited to the above-described embodiments, but can be varied within the scope of the following patent claims. For example, the accessory, instead of being constituted by a shelf divider, can alternatively be constituted by any other shelf accessory which has to be fixed to the shelf by its rear end. The system according to the invention can also comprise a number of different types of accessory which are fixed by their rear ends to the device according to the invention. The rear securing device with the friction rail can be formed from other than the above-stated materials, as long as the friction

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5 rail is formed from an elastic material which has a relatively high friction under deformation. The rear securing device can further comprise a hook which is directed forwards instead of rearwards. The corresponding engagement member of the accessory should then be directed rearwards to allow engagement with the hook of the rear securing device.

Patent claims

1. Device for securing the rear end of a shelf accessory (3) to a shelf (1), comprising an elongated
5 profiled element (6), which is configured for fixing on top of a shelf, substantially parallel with the shelf longitudinal direction, which profiled element has along its full length a substantially constant cross-sectional profile, with a lower base plate (8), a first
10 arm (9a) projecting up from the base plate and a second arm (9b) projecting from the first arm, **characterized by** a friction rail (10), which is made of an elastic material and which extends along substantially the full length of the profiled element and projects downwards
15 from the second arm.
2. Device according to Claim 1, wherein the friction rail (10) is disposed on the free end (9d) of the second arm (9b).
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3. Device according to Claim 1 or 2, wherein the friction rail (10) is substantially parallel with the first arm (9a) and substantially perpendicular to the base plate (8) and the second arm (9b).
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4. Device according to any one of Claims 1-3, wherein the friction rail (10) extends down from the second arm (9b) by a distance corresponding to around half the height of the first arm (9a).
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5. Device according to any one of Claims 1-4, comprising a double-sided adhesive tape (7), which is disposed on that side of the base plate (8) which is facing away from the first arm (9a), for fixing the
35 device to a shelf.
6. System for securing a shelf accessory (3) to a shelf (1), comprising a front securing device (2) configured for fixing to the front edge of a shelf, a

device (5) according to any one of Claims 1-5, and a shelf accessory (3), which has a front engagement member (4) for retentive engagement interaction with the front securing device and a rear engagement member 5 (32) configured for frictional engagement with the friction rail.