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(54) Loading tool for a goods presentation system

(57) The Loading tool for loading a plurality of goods (30) onto a support arm according to the present invention comprises a holding portion (10), a loading portion (12, 12') adjacent the holding portion, which loading portion receives the plurality of goods via an opening in the goods or their packaging when the loading tool is in use

and a longitudinal ridge (9). The loading tool and the loading portion have an elongated shape along a longitudinal direction (A) and the longitudinal ridge extends over the loading portion essentially parallel to the longitudinal direction (A).

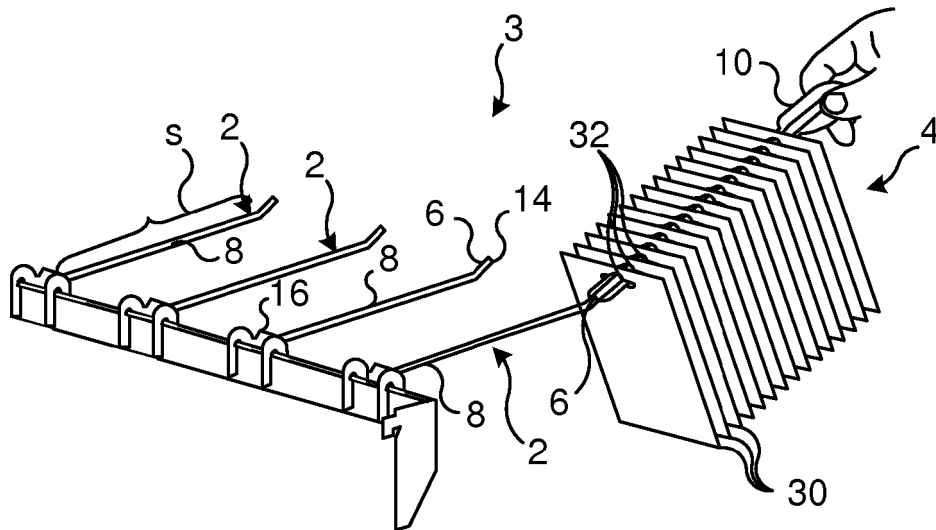


Fig. 1

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Description

TECHNICAL FIELD

[0001] The invention relates to a loading tool, which can be used to load goods onto a support arm or prong of a presentation system and to such a presentation system comprising the loading tool.

BACKGROUND

[0002] Up to today goods, for example bags comprising chewing gums, sweets or candy or packaging comprising for example batteries or other comparably small electronic articles, are hung one by one onto support arms installed on presentation systems in super markets. Usually the goods, which are sold in super markets arrive in larger packaging such as carton boxes or the like. For hanging the goods onto the presentation systems the carton boxes need to be opened. A person usually hangs the goods then one by one onto the support arm. The support is thereby typically inserted into an opening, which is usually arranged in an upper part of the packaging of each goods or each product.

[0003] FR 2 829 913 A1 illustrates a presentation system comprising a rack, on which rack a plurality of support arms are installed. The support arms are configured to receive goods so that they can be presented to customers in a store. As illustrated in figure 1 of FR 2 829 913 A1, there are usually quite a substantial amount of individually packed goods on display in a store.

[0004] As one can imagine loading each of the goods or each packaging one by one onto the support arms is cumbersome and time consuming. A time consuming process costs money, since a person has to spend more time loading or hanging the goods and she/he cannot be used for other tasks. Additionally, hanging the goods one by one might not be ergonomic since the person may be forced to pick the goods up from an opened carton box or the like, positioned on the floor.

[0005] Since the time- and thus the cost pressure in the retail business is quite high, there exists a need to overcome the above problems.

SUMMARY

[0006] It is an object of the present invention to provide a device and a presentation system that overcomes the mentioned problems and which is economic and effective.

[0007] Advantageously, the device is easy to use and configured for multiple usage.

[0008] The above object is solved by a loading tool, which comprises a holding portion and a loading portion, which loading tool may be used to pick up a plurality of goods or products from their delivery packaging such as a carton box or the like, to transport the goods to a support arm of a presentation system and to slide the plurality of

goods from the loading tool onto the support arm in a single step by either tilting the loading tool or by pushing the last packaging on the loading tool towards the support arm. The last packaging may thereby be the packing closest to the holding portion when the plurality of goods are loaded on the loading tool. The loading tool is built so that it can be inserted into an opening, which is usually arranged in an upper area of the packaging of each of the goods in order to hold the goods for transporting. Thus instead of picking each of the goods up and loading it onto the support arm one by one, a plurality of goods can be picked up and loaded onto the support arm. In the ideal case as many goods as necessary to fill a support arm may be loaded onto the loading tool.

[0009] Disclosed herein is the loading tool for loading a plurality of goods onto the support arm, the loading tool comprising the holding portion and the loading portion adjacent the holding portion, which loading portion receives the plurality of goods via an opening in the goods or their packaging when the loading tool is in use. Additionally the loading tool may comprise a longitudinal ridge, whereby the loading tool and the loading portion have an elongated shape along a longitudinal direction and whereby the longitudinal ridge extends over the loading portion essentially parallel to the longitudinal direction.

[0010] Alternatively, the longitudinal ridge may extend over the entire loading tool essentially parallel to the longitudinal direction.

[0011] A loading tool of the above kind can be used to load a plurality of goods onto a support arm by inserting the loading portion into the openings of the packagings of the goods. The loading portion is thereby configured to fit in size and shape into the openings of the packagings.

[0012] The loading tool allows to efficiently and quickly load the goods onto a presentation system comprising support arms.

[0013] The longitudinal ridge has two functions: firstly it provides improved longitudinal stability to the loading tool and secondly it can engage an upper half round part of the opening of the packaging of each of the goods so that the goods are aligned on the loading portion of the loading tool, as seen in the longitudinal direction of the loading tool.

[0014] In a preferred embodiment the holding portion and the loading portion are integrally formed from a piece of material, such as plastic, wood, paper, carton or metal.

[0015] This may provide a good stability of the loading tool so that also comparably heavy goods can be loaded onto the loading tool.

[0016] The loading portion of the loading tool may, in an embodiment comprise engaging means configured to engage the support arm during the unloading of the goods. The engaging means are preferably located at or close to a free end of the loading portion.

[0017] Such engaging means facilitate the unloading of the goods.

[0018] The engaging means may be a cut-out being located at or close to the free end of the loading portion. The cut-out may be configured to engage a free end of the support arm.

[0019] Since the loading tool could slide away from the free end of the support during the loading of the goods from the loading tool to the support arm, the cut-out is used to engage a free end or a tip of the support arm so that a slip off of the loading tool is prevented during off-loading of the goods.

[0020] In order to improve the engagement between the loading tool and the support arm during the loading operation, the engaging means may further comprise a projection located at or close to the free end of the loading portion, said projection being configured to engage a free end of the support arm.

[0021] This is especially beneficial if the support is made of a rod that is bent in the middle, whereby the free end of the support arm consists of the bent part.

[0022] In a preferred embodiment a width of the holding portion, as measured in a direction perpendicular to the longitudinal direction, is greater than a width of the loading portion, as measured in a direction perpendicular to the longitudinal direction.

[0023] This prevents the goods from sliding out of the loading tool the wrong way, namely towards the user.

[0024] Since in most cases the size of the carton boxes comprising the goods are chosen so that the amount of goods in the carton box directly fits onto one support arm, a length of the loading portion, as measured in the longitudinal direction, is at least three times a length of the holding portion, as measured in the longitudinal direction.

[0025] The length of loading portion, as measured in the longitudinal direction of the loading tool, may be from 15cm to 30cm and the length of the entire loading tool, as measured in the longitudinal direction of the loading tool, may be from 21cm to 36cm.

[0026] The longitudinal ridge may have a triangular cross section when cut in a direction perpendicular to the longitudinal direction. The height (h) of the triangular cross section or triangle may be from 3 to 9mm. The width of the base (b) may be from 6 to 12mm.

[0027] The triangular part of the cross section of the longitudinal ridge may be formed in order to fit, at least partially, into the upper half round part of the opening of each of the packagings

[0028] In another embodiment the longitudinal ridge may have a rounded cross section when cut in a direction perpendicular to the longitudinal direction.

[0029] The longitudinal cross section may further extend over the entire length of the loading tool.

[0030] The rounded cross section may be configured to fit into the upper half round part of the opening of each of the packagings. In order to fit the radius of the rounded part of the cross section may preferably be less than 5mm, more preferably less than 4mm.

[0031] Disclosed herein is further a presentation system for presenting goods, said presentation system comprising

a rack, a support arm used to support goods and the presentation system further comprising a loading tool. The support arm comprises a free end and a mounting end for mounting the support arm on the presentation rack. The presentation system further comprises a loading tool having a holding portion and a loading portion adjacent the holding portion. The holding portion is provided to be grasped by a user. The loading portion receives a plurality of goods via an opening in the goods or their packaging when the loading tool is used to load goods onto the support arm(s).

[0032] By using the presentation system the goods can be moved from the delivery carton box to the support in a fast and efficient manner.

[0033] In an embodiment of the presentation system, the support arm may comprise a straight portion and the length of the loading portion of the loading tool, as measured in a longitudinal direction of the loading tool, may correspond at least more or less to a length of the straight portion.

[0034] Thus even in case the amount of goods in the carton box does not fit onto the support arm, the loading tool is adapted to receive an amount of goods that fits more or less onto the straight portion of the support arm.

[0035] Adjacent to the straight portion an oblique portion may be arranged on the support arm. The oblique portion may form the free end(s) of the support arm, so that the goods can not fall that easy from the support arm when the support arm is filled with goods.

[0036] Disclosed herein is further a method for loading goods onto a support arm of a presentation rack comprising the steps of:

- Loading goods from a delivery container onto a loading tool by inserting the loading tool through openings in the goods or their packaging;
- Transporting the goods on the loading tool to a support arm of the presentation rack;
- Positioning the loading tool so that a free end of the loading tool is in contact with a free end of the support arm; and
- Sliding all the goods from the loading tool onto the support arm in a single step.

[0037] As previously described this method allows a person to load goods onto a presentation system or presentation shelf in an efficient and fast manner.

[0038] Generally, all terms used in the claims are to be interpreted according to their ordinary meaning in the technical field, unless explicitly defined otherwise herein. All references to "a/an/the element, apparatus, system, component, means, step, etc." are to be interpreted openly as referring to at least one instance of the element, apparatus, system, component, means, step, etc., unless explicitly stated otherwise. The steps of any method

disclosed herein do not have to be performed in the exact order disclosed, unless explicitly stated.

BRIEF DESCRIPTION OF THE DRAWINGS

[0039] The invention is now described, by way of example, with reference to the accompanying drawings, in which:

Fig 1 illustrates a loading tool according to an embodiment of the invention positioned so that goods may be slid from the loading tool onto a support arm;

Fig 2 illustrates how the loading tool according to an embodiment of the invention may be used to pick up goods from a delivery carton box;

Fig 3 perspectively illustrates the loading tool according to an embodiment of the invention loaded with a plurality of goods;

Fig 4a illustrates the positioning of the loaded loading tool relative to a support arm;

Fig 4b illustrates the loading of the goods onto the support arm;

Fig 4c illustrates the empty loading tool and the goods now loaded onto the support arm;

Fig 4d illustrates how the goods may be loaded onto a different type of a support arm;

Fig 4e illustrates the empty loading tool according to an embodiment of the invention and the goods now loaded onto the support arm shown in figure 4d;

Fig 5 perspectively illustrates the loading tool according to an embodiment of the invention;

Fig 6 illustrates a view onto the loading tool according to another embodiment of the invention; and

Fig 7 illustrates a view onto a cross section cut along line VII-VII of figure 6.

DETAILED DESCRIPTION

[0040] The invention will now be described more fully hereinafter with reference to the accompanying drawings, in which certain embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided by way of example so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout

the description.

[0041] Figure 1 illustrates a presentation system 3 comprising a loading tool 4, a plurality of support arms 2 and a rack 28. The loading tool 4 comprises a plurality of goods 30, which are loaded onto the loading tool 4 via an opening 32 in the upper part of the packaging of the goods 30.

[0042] Each of the support arms 2 comprises a straight portion 8 and an oblique portion 6. The oblique portion 6 is arranged adjacent to the straight portion 8 and they are formed integrally with each other for example by a metal rod. Alternatively the rod may be made of plastic. The oblique portion 6 of each of the support arms 2 comprises a free end 14. The straight portion 8 a mounting end 16. The mounting end 16 may comprise a mounting mechanism 22 so that each of the support arms may be mounted onto the rack 28.

[0043] A free end 20 of the loading tool 4 is positioned on the free end 14 of the support arm 2 in physical contact with the free end 14 and the oblique portion 6, respectively, of one of the support arms 2. A hand of person is illustrated in figure 1, said hand holding the loading tool 4 by a holding portion 10 thereof. The person may now push and/or slide the goods 30 from the loading tool 4 onto the support arm 2 by pushing the last goods on the loading tool 4, thus the goods arranged closest to the holding portion 10, towards the support arm 2. Alternatively the person may simply tilt the holding portion 10 upwards and thereby let the goods slide onto the support arm 2 by themselves.

[0044] Figure 2 illustrates how the goods 30 may be picked up from a delivery carton box 34. The delivery carton box may be provided for transporting the goods from the supplier to the super market or store. Once the carton box is delivered a person, normally an employee, opens the delivery carton box and inserts the loading tool 4' through the openings 32, which are arranged in an upper part of each individual packaging of each of the goods 32. This is a comparably simple and fast manual step, since each of the packaging of the goods 30, which may be for example sweets, chewing gums or the like packaged in bags or batteries and other electronic articles packaged in a mix of carton and plastic, can be engaged and thus picked up quickly.

[0045] The loading tool 4' as illustrated in figure 2 comprises the holding portion 10 and a loading portion 12, which loading portion 12 is inserted into the openings 32 of the packaging of the goods 30. The loading portion 12 is shaped so that it fits into a typical opening 32 of the packaging of goods 30, as will be explained later herein.

[0046] Figure 3 illustrates how the loading tool 4 may then be transported with the plurality of goods 30 loaded onto the loading portion 12 to the support arm 2 of the presentation system 3 (shown in figure 1). During the transport it is preferred, that the loading tool 4 is held slightly tilted so that no goods 32 fall off.

[0047] Figures 4a to 4e illustrate how the loaded loading tool 4' comprising the plurality of goods 30 is posi-

tioned on the support arm 2, 2' and how the goods 30 may be loaded onto the support arm 2, 2'.

[0048] Figures 4a to 4c illustrate the unloading step onto a support arm 2 comprising a single metal or plastic rod and figures 4d and 4e illustrate the unloading step onto a support arm 2' made of a double rod, which is typically bent in the middle so that the bent portion forms the free end 14' and so that the two ends of the bent rod are arranged at the mounting end (not shown in figures 4cd and 4e).

[0049] The loading tool 4, 4' may comprise engaging means arranged at or close the free end 20 of the loading portion 12, 12'. Additionally, the support arm 2, 2' may comprise complementary engaging means arranged at the free end 14 of the support arm 2, 2'.

[0050] The engaging means may be embodied in the form of a cut-out 24 (as shown in figures 2 and 4a) and/or in the form of a projection (not shown).

[0051] The complementary engaging means may be embodied for example by the oblique portion 6 and the free end 14 of the support arm 2, 2' respectively.

[0052] The loading tool 4' illustrated in figures 2 and 4a is slightly different from the loading tool 4 illustrated in figures 1 and 3 in that the loading portion 12' of the loading tool 4' comprises a cut-out 24 in a region close to the free end 20. This cut-out may be adapted so that it can engage the free end 14 of the support arm 2. This may reduce or even prevent the risk that the loading tool 4' slides off the support arm 2 during the unloading step. The cut-out 24 may be embodied in the form of a hole that has at least a slightly smaller diameter than the rod of the support arm 2. Once the loading tool 4' is engaged on the support arm 2 via the cut-out 24, the loading tool 4' may be tilted by lifting the holding portion 10, as shown in figure 4b.

[0053] Once the loading tool 4' is tilted the goods 30 may slide onto the support arm 2 by themselves or the user may push the packaging of the last goods 30 slightly so that all the other goods 32 on the loading portion 12' slide onto the support arm 2.

[0054] Figure 4c illustrates how the goods 30 are now all loaded onto the support arm 2. The loading tool 4' may now be removed and refilled with another plurality of goods 30 and the next support arm 2 may be loaded with goods 30. Figure 4c also illustrates the engagement between the free end 14 of the support arm 2 and the free end 20 and cut-out 24, respectively, of the loading tool 4'.

[0055] Figure 4d illustrates how the plurality of goods 30 loaded on the loading tool 4' may be slid or loaded onto another type of a support arm 2'. As previously mentioned such a type of support arm 2' may be made of a rod that is bent in the middle so that the two ends of the rod are arranged at the mounting end 16 (c.f. figure 1) and so that the free end 14' of the support arm 2' is formed by the bent part of the rod, as best illustrated in figure 4e. Figure 4e illustrates the goods 30 now all loaded onto the support arm 2' and the loading tool 4' ready to be removed. In this case the cut-out 24 may not engage the

free end 14' of the support arm 2'.

[0056] However, it is for example possible to arrange a prong or projection or the like (not shown) at the free end 20 of the loading tool 4' in order to improve the engagement between the loading tool 4' and the support arm 2'. Such a prong or projection may preferably point downwards when the loading tool 4' is positioned on the free end 14' of the support arm 2'. The prong or projection may be part of the engaging means.

[0057] Turning now to figure 5, which perspective illustrates an embodiment of the loading tool 4 according to the invention, the holding portion 10 is arranged adjacent the loading portion 12 and the holding portion 10 and the loading portion 12 are preferably made of a single piece of material such as metal, wood, paper, carton or plastic. In order to facilitate the holding of the holding tool 4, the holding portion 10 is wider than the loading portion 10, as will be described later on. The loading tool 4 further comprises a longitudinal ridge 9, which is also illustrated in figure 6.

[0058] Figure 6 illustrates a top down view onto an embodiment of the loading tool 4' according to the invention. The longitudinal ridge 9 extends over the entire length (L1 + L2) of the loading tool 4' along and at least more or less parallel to a longitudinal direction A. In an alternative embodiment, the longitudinal ridge 9 may only extend over the loading portion (not shown). The longitudinal ridge 9 may provide stability and it is also configured to engage an upper half round part of the opening of the packaging of each of the goods 30 (not shown in figure 6) so that the goods 30 are aligned along the longitudinal direction A when loaded onto the loading tool 4'.

[0059] The holding portion 10 has a width W1, which width W1 is bigger than a width W2 of the loading portion 12'. When the goods 30 are loaded onto the loading tool 4', the width W2 of the holding portion 10 prevents the goods 30 from sliding out by passing the holding portion 10 during the transport of the goods 30 from the delivery carton box to the support arm 2, 2'. The width W2 of the loading portion 12' is chosen so that the loading portion 12' preferably snugly fits into the openings 32 of the packaging of the goods 30. The width W1 of the holding portion 10 and the width W2 of the loading portion 12' are measured in a direction perpendicular to the longitudinal direction A. The width W1 of the holding portion 10 is about 1.5 to 3 times the width of the loading portion 12'.

[0060] Figure 6 further illustrates the length L1 of the holding portion 10 and the length L2 of the loading portion 12'. The length L1 of the holding portion 10 is smaller than the length L2 of the loading portion 12'. Preferably the length L2 of the loading portion 12' is about two to five times the length L1 of the holding portion 12', preferably two to four times the length L1. The length L1 of the holding portion 10 and the length L2 of the loading portion 12' summed up result in the total length (L1 + L2) of the loading tool 4'. The length L2 of the loading portion 12' may be at least more or less the same as the length

S of the straight portion 8 of the support arm 2, as illustrated in figure 1, so that the loaded goods 30 on the loading tool 4, 4' fit onto the straight portion 8 of the support arm 2, 2'.

[0061] In figure 6 the cut-out 24 is further illustrated arranged close to free end 20 of the loading tool 12'. The above measurements may, however also be valid for an embodiment of the loading tool 4, where the loading portion 12 does not comprise a cut-out 24.

[0062] Figure 7 illustrates a cross section of the loading portion 12' as visible when cut along line VII-VII illustrated in figure 6. The longitudinal ridge 9 has a triangular cross section with a base b and a height h. The material thickness d of the loading portion 12' is about 0.3mm- to 3mm, depending on the material of the loading tool 4, 4'. The base b may have a value from 6mm to 12mm, preferably 7mm to 11mm, more preferably 8mm to 10mm. The height may have a value from 3mm to 9mm, preferably from 4mm to 8mm, more preferably from 4mm to 6mm.

[0063] Again both of the illustrated embodiments of the loading tool 4, 4' may comprise a cross section as described above.

[0064] It falls within the scope of the invention to provide a ridge (not shown) having a rectangular cross section or a ridge comprising a rounded or half-rounded cross section, whereby the rounded part follows a radius from 2 to 8mm, preferably 4 to 6mm (not shown).

[0065] The invention has mainly been described above with reference to a few embodiments. However, as is readily appreciated by a person skilled in the art, other embodiments than the ones disclosed and combinations of the illustrated embodiments as described above are equally possible within the scope of the invention, as defined by the appended patent claims.

Claims

1. Loading tool (4, 4') for loading a plurality of goods (30) onto a support arm (2, 2'), the loading tool comprising:

- a holding portion (10);
- a loading portion (12, 12') adjacent the holding portion, which loading portion receives the plurality of goods via an opening in the goods or their packaging when the loading tool is in use; and
- a longitudinal ridge (9);

characterized in that the loading tool and the loading portion have an elongated shape along a longitudinal direction (A) of the loading tool and **in that** the longitudinal ridge extends over the loading portion substantially parallel to the longitudinal direction (A).

2. Loading tool according to claim 1, wherein the hold-

ing portion and the loading portion are integrally formed from a piece of material, such as plastic, wood, paper, carton or metal.

3. Loading tool according to claim 1 or 2, wherein the loading portion (12, 12') comprises engaging means, which engaging means are arranged at or close to a free end (20) of the loading portion and wherein the engagement means are used to engage the support arm (2, 2') during the unloading of the goods.

4. Loading tool according to claim 3, wherein the engaging means comprise a cut-out (24), said cut-out (24) being located at or close to the free end (20) of the loading portion, the cut-out (24) being configured to engage a free end (14) of the support arm.

5. Loading tool according to any of the preceding claims 3 or 4, wherein the engaging means comprise a projection configured to engage a free end (14') of the support arm.

6. Loading tool according to any of the preceding claims 1 to 5, wherein a width (W1) of the holding portion, as measured in a direction perpendicular to the longitudinal direction (A), is greater than a width (W2) of the loading portion, as measured in a direction perpendicular to the longitudinal direction (A).

7. Loading tool according to any of the preceding claims 1 to 6, wherein the loading portion is longer than the holding portion, as measured along the longitudinal direction (A).

8. Loading tool according to any of the preceding claims 1 to 7, wherein a length (L2) of the loading portion, as measured in the longitudinal direction (A), is at least three times a length (L1) of the holding portion, as measured in the longitudinal direction (A).

9. Loading tool according to any of the preceding claims 1 to 8, wherein the longitudinal ridge has a triangular cross section when cut in a direction perpendicular to the longitudinal direction, whereby a triangle has a height h and a base b.

10. Loading tool according to any of the preceding claims 1 to 9, wherein the longitudinal ridge extends over the entire length of the loading tool.

11. Presentation system (3) for presenting goods (30), said presentation system comprising at least one support arm (2, 2') used to support goods (30) and a loading tool (4, 4'), the support arm comprising a free end (14, 14') and a mounting end (16) and the loading tool comprising a holding portion (10) and a loading portion (12, 12') adjacent the holding portion, which loading portion receives a plurality of

goods via an opening in the goods or their packaging when the loading tool is in use, wherein the loading tool being arranged to slide the plurality of goods onto the support arm in one step.

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- 12.** Presentation system according to claim 11, wherein the loading portion (12') comprising engaging means and the support arm (2, 2') comprises complementary engaging means for engaging the loading tool (4') and the support arm (2, 2') during the unloading of the goods. 10
- 13.** Presentation system according to claim 12, wherein the engaging means is a cut-out (24) and wherein the cut-out is used to engage the complementary engaging means in the form of the free end (14) of the support arm (2). 15
- 14.** Presentation system according to any of claims 11 to 13, wherein the support arm comprises a straight portion (8) and wherein the length of the loading portion (12, 12') of the loading tool (4, 4'), as measured in a longitudinal direction (A) of the loading tool, corresponds at least more or less to a length (S) of the straight portion (8). 20
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- 15.** Method for loading goods (30) onto a support arm of a presentation rack (28) comprising the steps of:
- Loading goods from a delivery container onto a loading tool (4, 4') by inserting the loading tool through openings in the goods or their packaging; 30
 - Transporting the goods on the loading tool to a support arm (2, 2') of the presentation rack; 35
 - Positioning the loading tool so that a free end (20) of the loading tool is in contact with a free end (14) of the support arm; and
 - Sliding all the goods from the loading tool onto the support arm in a single step. 40

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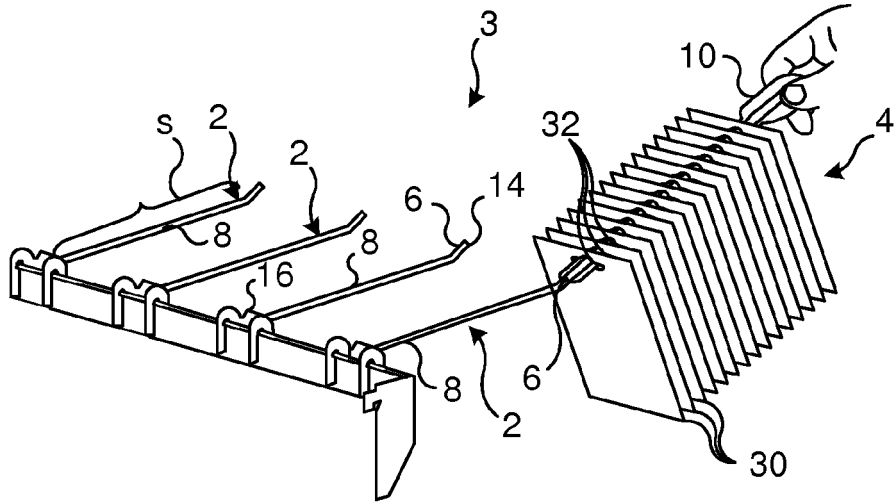


Fig. 1

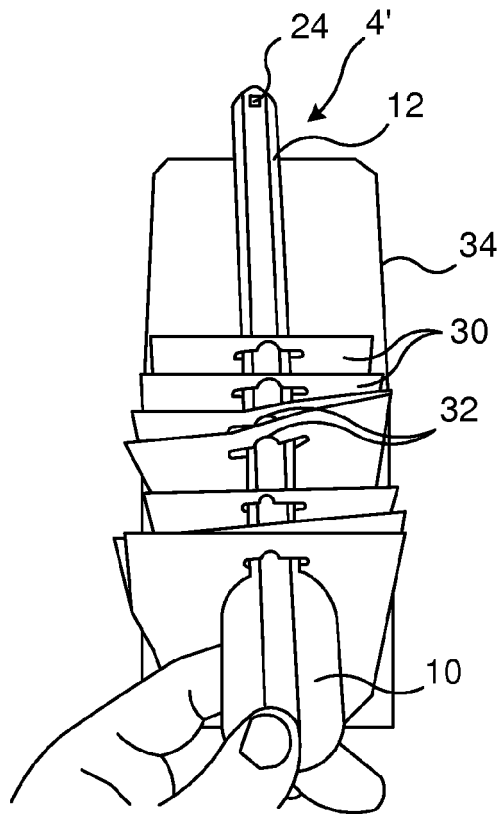


Fig. 2

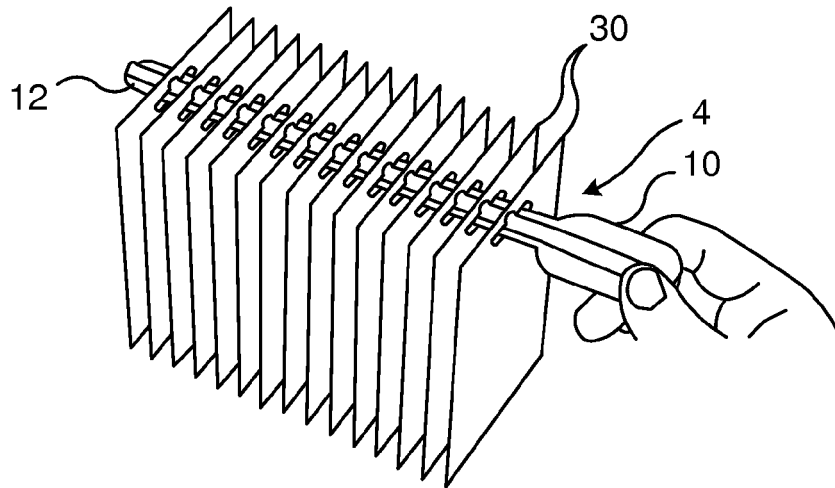


Fig. 3

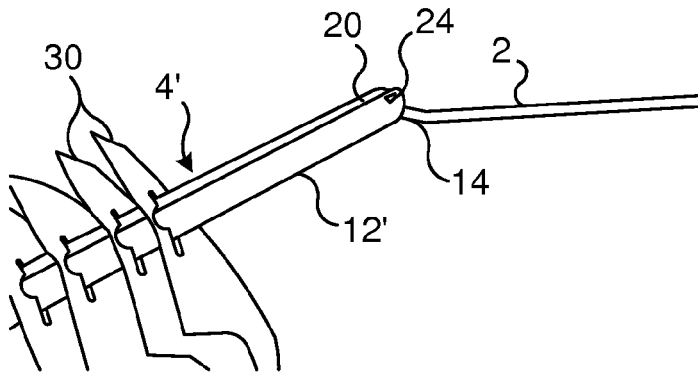


Fig. 4a

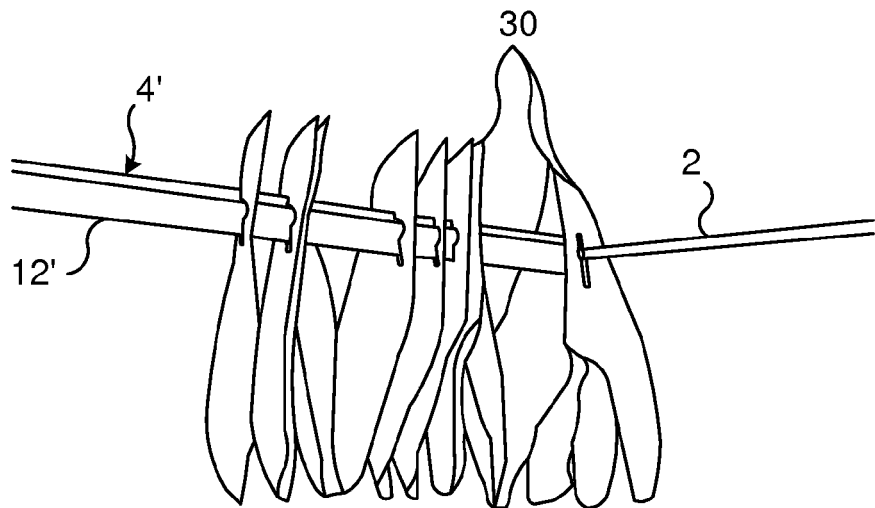


Fig. 4b

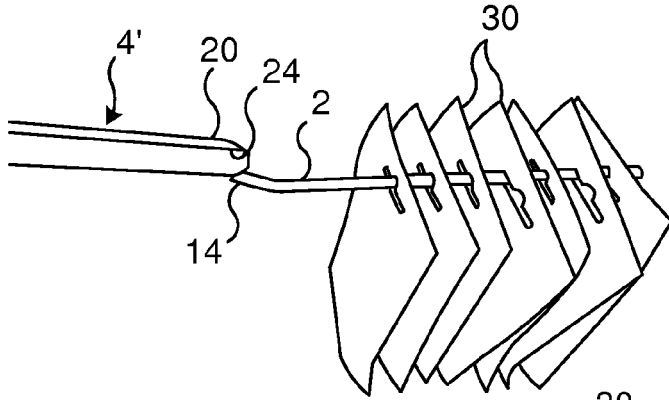


Fig. 4c

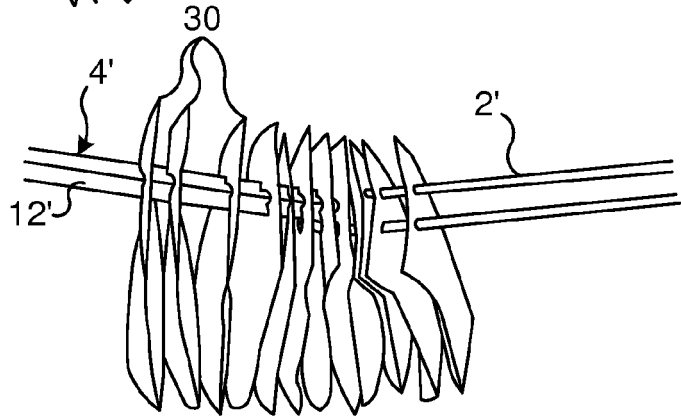


Fig. 4d

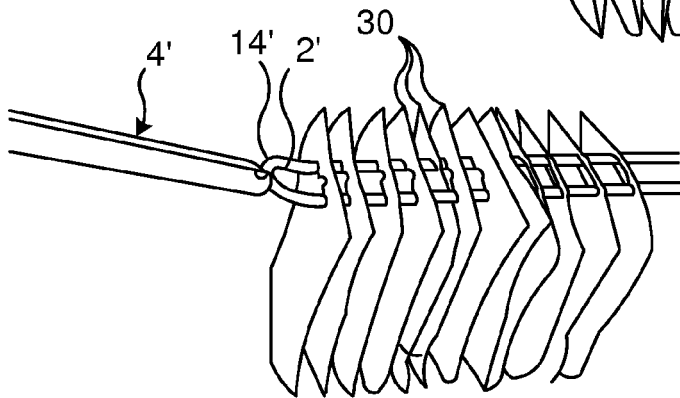


Fig. 4e

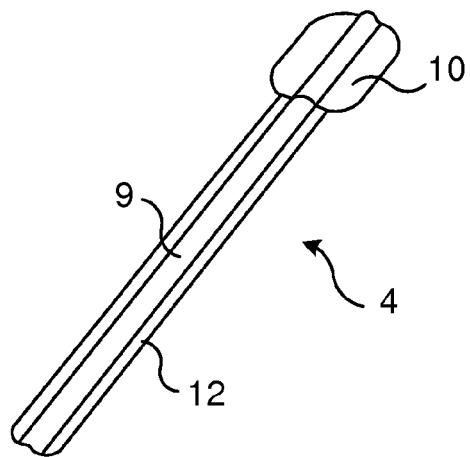


Fig. 5

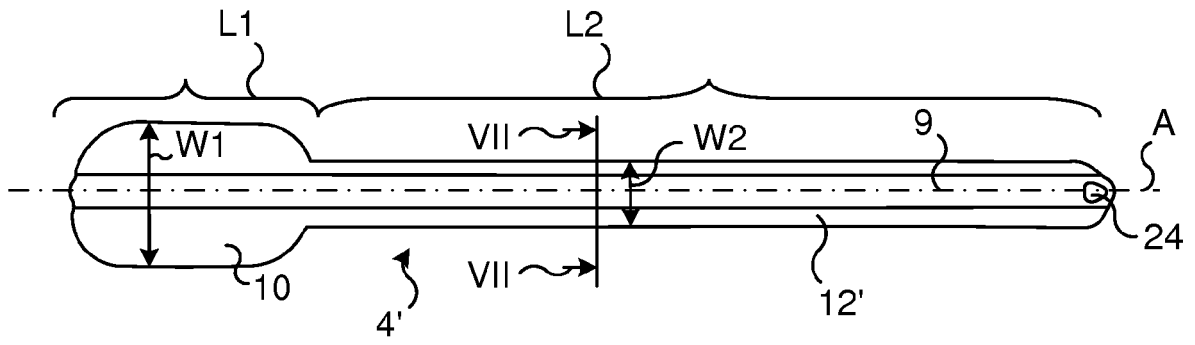


Fig. 6

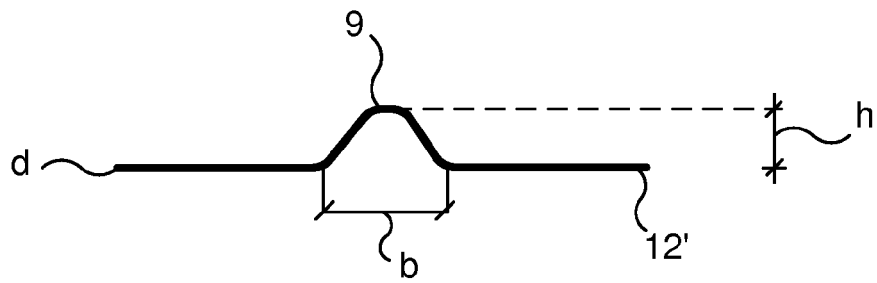


Fig. 7



EUROPEAN SEARCH REPORT

Application Number
EP 14 16 6002

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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	US 2003/000052 A1 (DOSSETT LARRY R [US] ET AL) 2 January 2003 (2003-01-02) * paragraphs [[0018]], [[0024]]; figures 1,3 *	1-15	INV. A47F5/08
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