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(54) **A DISPENSER**

(57) A dispensing system for use with a packaging item comprising a dispenser (1) cooperable with a packaging item; the dispenser (1) comprising a main body (2), a support member (9), the support member (9) having a main guide surface (10), the support member (9) being slidably connected to the main body (2) and a first attachment member; the packaging item comprising at least one pouch portion removably attached at one end to a block portion, the block portion having at least one connection member for, in use, complementary engaging with the first attachment member so as to prevent relative movement between the packaging item and the support member (9) whilst permitting lateral movement of the support member (9) with respect to the main body (2).

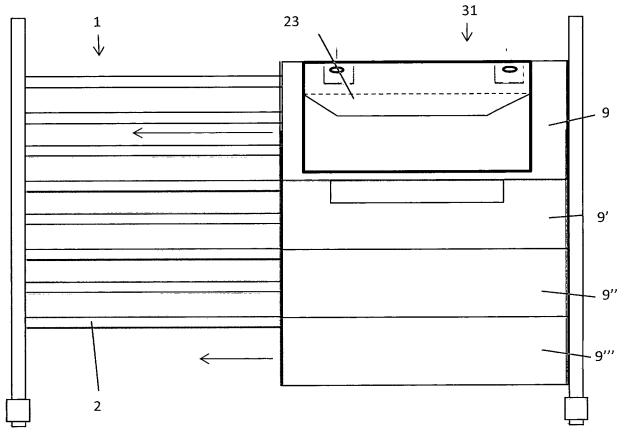

Fig. 6

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Description

[0001] This invention relates to a dispenser that may be used for packaging items to be filled with objects, in particular for use with wicketed polythene bags.

[0002] It is well known to use packing stations to aid in the packaging of packing of objects which are due for delivery. The use of the packing station makes the packing a more efficient process because the packer has everything they need to complete the packing process to hand. Increasing the speed of packing items has become particularly important due to the increased demand of online shopping where it is required for goods to be distributed from a depot to the home or other place of a customer.

[0003] Whilst machine packing is readily used in the packing industry, there is still a need for people to do the packing by hand, whereby the packer selects the packing item, places the object to be packed within the packaging item and then seals the packaging item and forwards the package for delivery.

[0004] Packing stations may take different forms, however standard packing stations typically comprise benches having modular components to enable the bench to be adapted to the needs of the packer. For example there may be containers positioned under the bench for containing delivery bags which are to be filled with the item to be delivered. The packer would remove one of the bags from below the bench, place the back on the bench, fill the bag and seal the back once the desired contents of the bag are applied thereto. It is usual to have a variety of objects to be packed, requiring bags of different sizes to be implemented. To improve efficiency, the bags or the storage container for the bags must be easily distinguishable to enable the packer to select the correct bag for the product to be dispatched. It the packer consistently takes the wrong bag then their productivity would drop.

[0005] It is common to use Wicketed bags which are bags that are stacked together and held together on a metal wicket that acts as a dispenser. A lip is provided at one end of the bag where two holes are provided that enable the metal wicket to hold the bags. Washers are used to hold the stack of bags securely on the wicket.

[0006] Whilst this system is useful since a new bag is positioned ready to be filled immediately after the uppermost bag is filed and removed, it is common that bags of different sizes are usually required in a given packing shift and arranging the different sized bags side by side in a typical packing station requires a large space that is not always available.

[0007] Therefore, embodiments of the present invention are intended to address at least some of the above described problems and desires. In particular the dispenser provides a more efficient and space saving way of packing bags of different sizes. This makes for a more time and efficient and cost efficient packing line.

[0008] According to a first aspect of the invention there is provided a dispensing system for use with a packaging item comprising,

a dispenser co-operable with a packaging item,

the dispenser comprising a main body, a support member, the support member having a main guide surface, the support member being slideably connected to the main body, and a first attachment member;

the packaging item comprising at least one pouch portion removeably attached at one end to a block portion, the block portion having at least one connection member for in use complimentary engaging with the first attachment member so as to prevent relative movement between the packaging item and the support member whilst permitting lateral movement of the support member with respect to the main body.

[0009] The packaging item may be a bag connected to the block portion by a perforated connecting portion.

[0010] The first attachment member may be a first and second hook extending from a planar surface of the support member.

[0011] The attachment member may be an aperture located in the block portion of the packaging item.

[0012] The guide surface may have a first upturned edge and a second upturned edge opposed to the first upturned edge for, in use, extending either side of the packaging item so as to provide a chute for directing objects into the pouch of the packaging item.

[0013] The guide surface of the support member may be inclined.

[0014] The main body may comprise a first leg and a second leg spaced apart from each other with an elongate portion attached there-between.

[0015] The support member may comprise a carriage portion attached to the rear of the guide surface, the carriage portion being slideably connected to the main body.

[0016] The carriage may comprise a first channel located towards the top of the carriage and a second channel located to the bottom of the carriage, the channel for receiving a first and second part of the main body.

[0017] The first part may be a first elongate member and the second part is a second elongate member.

[0018] The first part may be a first pole and the second part is a second pole, the two poles being vertically and horizontally offset from each other.

[0019] The first pole may be connected at a rearward region of the main body and the second pole is at a forward region of the main body such that the first pole is located higher than the second pole such that connection of the support member with the first and second pole provides inclination of the guide surface of the support member.

[0020] The dispensing system may comprise a first support member and a second support member, both the first and second support members being slideably connected to the main body, the first support member

being positioned at a first vertical height and the second positioned being positioned at a second vertical height that differs to the first vertical height.

[0021] The first support member may be moveable with respect to the second support member and along the longitudinal axis of the main body.

[0022] A lock may be located on the support member for configuration between a first locked state prohibiting movement of the support member with respect to the main body and a second unlocked state permitting movement of the support member with respect to the main body.

[0023] The guide surface may be a planar surface.

[0024] In a second aspect of the invention there is provided a dispenser for use in the system according to claim 1 comprising

a main body having a first leg portion and a second leg portion spaced apart from each other and at least one elongate body extending in an axial direction and secured between the first and second leg portion at its first and second end,

at least one support member having a substantially planar part; and a connector means arranged on a surface of the at least one support member, the at least one support member being slideably connected to the at least one elongate body such that the axial position of the support member relative to one end of the elongate body may be adjustable in use.

[0025] The support member may be configurable between a first longitudinal position on the elongate body and a second longitudinal position on the elongate body.

[0026] The elongate body may be a bar or pole.

[0027] There may be provided a first support member and a second support member wherein the first support member is slideable relative to the second support member and along the longitudinal axis of the main body.

[0028] The first support member may be slideably attached to the main body and the second support member is slideably attached to the main body, wherein the first support member may be located at a first vertical position and the second support member may be located at a second vertical position that differs to the first vertical position.

[0029] The main body may be a rack.

[0030] The first attachment member may be a first and second hook extending from a planar surface of the support member and the first and second hook, in use, may be engageable with the packaging item to be implemented.

[0031] The planar portion may comprise a first upturned edge and a second upturned edge for, in use, extending either side of the packaging item so as to provide a chute for directing objects towards the opening and inside of the packaging item.

[0032] The guide surface may be inclined.

[0033] The support member may comprise a carriage portion attached to the rear of the guide surface, the carriage may be slideably attached to the main body along its longitudinal axis.

[0034] The carriage may comprise a first channel located towards the top of the carriage and a second channel located towards the bottom of the carriage, each channel may be configured to receive a first and second part of the main body respectively.

[0035] The first part of the main body may comprise a first elongate member and the second part may comprise a second elongate member.

[0036] The first elongate member may be a first pole and the second elongate member may be a second pole, the two poles may be vertically and horizontally offset from each other.

[0037] The first pole may be connected to a rearward region of the main body and the second pole may be connected to a forward region of the main body and the first pole may be located at a higher vertical position than the second pole such that connection of the support member with the first and second pole may provide inclination of the guide surface of the support member.

[0038] The dispenser may comprise a lock located on the support member for configuration between a first locked state prohibiting movement of the support member with respect to the main body and a second unlocked state permitting movement of the support member with respect to the main body.

[0039] The main body may be formed from a metal.

[0040] The guide surface may comprise a planar surface.

[0041] In a further aspect of the invention there is provided a packaging item for use in the system according to claim 1 comprising at least one pouch portion having a closeable opening;

a connecting block portion; and

at least one attachment means located in the block portion, wherein the pouch portion is releasably attached to the connecting block at a connection point.

[0042] The packaging item may comprise a perforated junction at the connection point.

[0043] The pouch portion may a bag. Alternatively it may be an enveloped or another pouched item.

[0044] The bag may be formed of polythene.

[0045] The connecting block may be formed of polythene.

[0046] The opening may be sealable via a flap portion so as to seal the contents of the packaging item.

[0047] The closeable opening may be located proximal to the connection point.

[0048] Whilst the invention has been described above it extends to any inventive combination of the features set out above, or in the following description, drawings or claims. For example, any features described in relation to any one aspect of the invention is understood to be disclosed also in relation to any other aspect of the invention.

[0049] The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 is a perspective photograph of the dispenser
Figure 2 is a perspective view of the dispenser;
Figure 3 is a front view of the dispenser;
Figure 4 is a cross-sectional view of the dispenser;
Figure 5 is a side view of the dispenser;
Figure 6 is a schematic of the packaging item; and
Figure 7 is a front view of the dispensing system.

[0050] In Figure 1 there is shown a dispenser 1 comprising a main body 2 formed of a fist and second leg 3, 4 spaced apart from one another with an elongate portion 5 arranged therebetween. The elongate portion 5 is attached at its first end 5a to the first leg 3 by means of a threaded bolt 6 the threaded part (not shown) being received in a threaded bore (not shown) located in the first end of the elongate portion 5a. The second end 5b of the elongate portion 5 is also attached to second leg 5 by a threaded bolt (not shown) in the same way. The first and second legs 3, 4 are terminated by a first and second food portion 7, 8 respectively. Because the packing occurs at the front region of the dispenser 1 the first part 7a of the foot 7 that extends forwardly of the leg 3 is greater than the length of the second part 7b of the foot that extends rearwardly of the leg 3. This ensures that the foot 7 provides a suitable counterforce to the weight of the objects inserted into the packaging item to be used on the dispenser and therefore prevents tilting or falling of the dispenser in a forwardly direction, thereby improving its stability. A support member 9 is slideably connected to the main body 2. It comprises a main guide surface10 upon which the packaging item makes contact with and is a planar surface. The support member 9 has a first upturned edge 11 and a second upturned edge 12. In use, the upturned edges 11, 12 extend upwardly of the planar guide surface 10, either side of the packaging item so as to provide a chute for directing objects towards the opening and inside region of the packaging item. The planar surface 10 is inclined downwardly of its connection point with the main body 2. This is so the packer can use gravity to aid the positioning of the object within the packaging item.

[0051] The support member 9 comprises a first and second hook 13a, 13b spaced apart from each other and located on the guide surface 10 proximal to the top edge 10a of the guide surface. The first and second hooks 13a, 13b are used to attach the packaging item to the dispenser 1.

[0052] The support member 9 further comprises a carriage portion 14 attached to the rear side of the guide portion 10 (which can also be considered to be a plate portion or the guide surface). The carriage 14 is slideably attached to the main body 2 causing lateral movement of the support member 9 by the packer i.e. movement along the longitudinal axis of the dispenser on the packer applying a lateral force thereto.

[0053] The carriage 14 has a first channel 15 located towards the top of the carriage 14 and a second channel 16 located towards the bottom of the carriage 14. Each channel 14, 15 is configured to receive a first part 17 and second part 18 of the main body respectively.

[0054] The first part of the main body 17 is a first elongate member connected between the first and second leg 3, 4 and the second part of the main body 18 comprises a second elongate member connected between the first and second leg 3,4. The main body takes the appearance of a rack.

[0055] The first elongate member 17 is a first pole 17 and the second elongate member 18 is a second pole 18 whereby the two poles are configured to be vertically and horizontally offset from each other. In this arrangement the first pole 17 is connected between the first and second leg 3, 4 at a rearward region of the main body 2 and the second pole 18 is connected between the first and second leg 3, 4 at a forward region of the main body 2. The first pole 17 is located at a higher vertical position on the main body 2 than the second pole 18 such that connection of the support member 9 with the first and second pole 17, 18 provides inclination of the guide surface 10 of the support member 9 (with the remote end of the support member positioned lower than the connecting end). The first pole 17 and the second pole 18 provide a first pole pair. Multiple pole pairs are arranged at varying vertical heights between the first and second leg 3, 4. In Figure 1, four pole pairs are provided for receiving four support members 9, 9', 9", 9"'. Each support member can receive a packing item of a different size.

[0056] In Figure 2 the positioning of the hooks 13a, 13b at the top of the support member 9 is shown. The plate-like form of the support member can also be seen in Figure 2.

[0057] In Figure 3 the channels 15, 16 are clearly shown, as are the stop portions 19 that retain the carriage 14 of the support member 9 on the pole pair. To fit the support member 9 onto the pole pair the stop members 19 are removed and the poles 17, 18 are passed through the feed hole 15', 16' which feed the inner channels 15, 16. The stop member 19 is then applied in the feed holes 15', 16'. The stop 19 applied to the feed hole 15' that permits access to the upper channel 15 of the support member 9 can be pushed further into the feed opening so that it comes into contact with the pole 17 sufficiently to prevent movement of the support member 9 along the pole pair.

[0058] Alternatively, a lock (not shown) is located on the support member for configuration between a first locked state prohibiting movement of the support member with respect to the main body and a second unlocked state permitting movement of the support member with respect to the main body (along the first and second poles).

[0059] The hooks 13a, 13b of the dispenser 1 are shown in Figure 3 to have a flat lower portion 20 which accommodates the thickness of the block head of the packaging item. The hook is then shaped upwardly 21 and extends towards the surface of the guide surface to ensure the packaging item is retained in position.

[0060] In Figure 4, the upper end 22 of the carriage 14 is shown to extend outwardly of the rear surface of the first and second leg 3,4. By applying a force to this projection in an upwardly direction the support plate can be removed from the pole pair.

[0061] The main body 2 of the dispenser 1 and the support members 9, 9', 9", 9"'are formed from a metal.

[0062] In use, the at least one support member 9 is slideable along at least one elongate body 17 such that the axial position of the support member 9 relative to one end of the elongate body may be adjustable. Therefore, the support member 9 is configurable between a first longitudinal position on the elongate body 17 and a second longitudinal position on the elongate body 9.

Multiple support members 9, 9', 9", 9'" may be configured in a stacked arrangement, wherein each support member is connected via a pole pair. For example four support members are displayed in Figures 1 to 4, wherein a first of these support members 9 is slideable relative to a second of these support members 9'.

Each of the support members 9, 9', 9", 9'" is slideably attached to the main body 2 wherein the first support member 9 is located at a first vertical position, the second support member 9' is located at a second vertical position that differs to the first vertical position, the third support member 9" is located at a third vertical potion that differs to the first and second position and the fourth support member 9'" is located at a fourth vertical position that differs to the first, second, and third positions.

[0063] In Figure 5, there is shown a packaging item 23 for use with the dispenser 1. The packaging item 23 is a bag that comprises at least one pouch portion 24 having a closeable opening 25. Multiple bags are stacked together and held together on a connecting block head 26. A first and second aperture 27a, 27b is located spaced apart from one another on the block head 26. In use the hooks 13a, 13b of the dispenser 1 are received by these apertures 27a, 27b and the bags are held in place. Each bag in the stack is releasably attached to the connecting block or block head 26 at a connection point 28. This detachment of the bag from the block head 26 is aided by means of a perforated junction 29 configured at the connection point. The bag and the block head 26 are formed of polythene.

[0064] The bag is initially in an open state allowing for a packer to insert objects within the pouch portion 24 of the bag. Once the packer has finished the bag can be sealed by applying a closing flap 30. The closeable opening 25 is located proximal to the connection block 26 and close to and below the perforated connection point 28, 29.

[0065] In use, the user would select a stack of bags connected to the block head 26 at perforated connection junctions 29. The user would then attach the apertures 27a, 27b of the block head onto the hooks 13a, 13b of the dispenser, as shown in Figure 6. The base of the lowermost bag comes into contact with the guide surface 10 of the dispenser 1 to stabilise the position of the bag. The objects are then placed within the bag with the help of a chute effect provided by the inclined support member 9. Once the bag has been filled as desired, the bag is sealed by means of the sealing flap 30 which has a sticky sealing surface (not shown) and the bag can be detached from the block head 26 by tearing it away from the block head along its perforations 29. In the case that a bag of a different size is required, the upper plate or support member 9 can be moved to one side to permit as shown by the upper arrow so as to gain access to a bag located on a lower plate or support member 9'. This arrangement provides an efficient and reliable way for a packer to access different sized bags as and when required, whilst providing a dispensing system 31 with a small space requirement since the plates or supporting members 9, 9', 9", 9'" can be layered vertically and the desired plate moved to one side of the others as needed.

[0066] Other support surfaces, for example the lowermost support surface 9"' may also be moved as shown by the lowermost arrow in Figure 6. Each plate is moveable between a first position where the first side of the support member comes into contact with the first leg and a second position wherein the second side of the support plate comes into contact with the second leg. The support member can then be maneuvered between these two extremes.

The connection block or block head 26 is removable from the hooks of the dispenser once the bags have been depleted.

[0067] The term packaging item may refer to any item of packaging, for example a bag or an envelope or other packaging item that has a space for receiving an object to be dispatched in the post or via a courier or other delivery service.

[0068] Various modifications to the principles described above would suggest themselves to the skilled person. For example, another type of packaging item may be applied to the dispenser, for example an envelope. Alternatively the plates provided as a support for the bag may be of varying sizes to be adapted to the size of bag that it is to be used with.

[0069] For example one or more of the support members may be fixed and are not slideably attached to the other or others.

[0070] Alternatively the guide surface of the support member may have an arcoidal cross section to aid the chute or funnelling effect.

Claims

1. A dispensing system for use with a packaging item comprising,
   a dispenser co-operable with a packaging item,
   the dispenser comprising a main body, a support member, the support member having a main guide surface, the support member being slidably connected to the main body, and a first attachment member;
   the packaging item comprising at least one pouch

portion removably attached at one end to a block portion, the block portion having at least one connection member for in use complimentary engaging with the first attachment member so as to prevent relative movement between the packaging item and the support member whilst permitting lateral movement of the support member with respect to the main body.

2. A dispensing system according to claim 1, wherein the packaging item is a bag connected to the block portion by a perforated connecting portion; and/or wherein the first attachment member is a first and second hook extending from a planar surface of the support member; and/or wherein the connection member is an aperture located in the block portion of the packaging item.

3. A dispensing system according to claim 1 or claim 2, wherein the guide surface has a first upturned edge and a second upturned edge opposed to the first upturned edge for, in use, extending either side of the packaging item so as to provide a chute for directing objects into the pouch of the packaging item; and/or wherein the guide surface of the support member is inclined; and/or wherein the guide surface is a planar surface.

4. A dispensing system according to any preceding claim,
wherein the main body comprises a first leg and a second leg spaced apart from each other with an elongate portion attached there-between; and/or wherein the support member further comprises a carriage portion attached to the rear of the guide surface, the carriage portion being slidably connected to the main body; and optionally wherein the carriage has a first channel located towards the top of the carriage and a second channel located towards the bottom of the carriage, each channel for receiving a first and second part of the main body respectively; and optionally wherein the first part is a first elongate member and the second part is a second elongate member, or wherein the first part is a first pole and the second part is a second pole, the two poles being vertically and horizontally offset from each other; and optionally wherein the first pole is connected at a rearward region of the main body and the second pole is at a forward region of the main body such that the first pole is located higher than the second pole such that connection of the support member with the first and second pole provides inclination of the guide surface of the support member.

5. A dispensing system according to any preceding claim comprising a first support member and a second support member, both the first and second support members being slideably connected to the main body, the first support member being positioned at a first vertical height and the second positioned being positioned at a second vertical height that differs to the first vertical height; and optionally wherein the first support member is moveable with respect to the second support member and along the longitudinal axis of the main body.

6. A dispensing system according to any preceding claim comprising a lock located on the support member for configuration between a first locked state prohibiting movement of the support member with respect to the main body and a second unlocked state permitting movement of the support member with respect to the main body.

7. A dispenser for use in the system according to claim 1 comprising a main body having a first leg portion and a second leg portion spaced apart from each other and at least one elongate body extending in an axial direction and secured between the first and second leg portion at its first and second end, at least one support member having a guide surface; and a connector means arranged on the guide surface of the at least one support member, the at least one support member being slidably connected to the at least one elongate body such that the axial position of the support member relative to one end of the elongate body may be adjustable in use.

8. A support member according to claim 7, wherein the support member is configurable between a first longitudinal position on the elongate body and a second longitudinal position on the elongate body; and/or wherein the elongate body is a bar or pole; and/or wherein there is provided a first support member and a second support member wherein the first support member is slidable relative to the second support member and along the longitudinal axis of the main body; and optionally wherein the first support member is slidably attached to the main body and the second support member is slidably attached to the main body, wherein the first support member is located at a first vertical position and the second support member is located at a second vertical position that differs to the first vertical position.

9. A dispenser according to claim 7 or claim 8, wherein the main body is a rack; and/or wherein the first attachment member is a first and second hook extending from a planar surface of the support member and the first and second hook,
in use, are engageable with the packaging item to be implemented; and/or wherein the support member has a first upturned side edge and a second upturned side edge for, in use, extending either side of the packaging item so as to provide a chute for directing objects towards the opening and inside of the

packaging item.

10. A dispenser according to any of claims 7 to 9, wherein the guide surface is inclined; and/or wherein the guide surface is a planar surface.

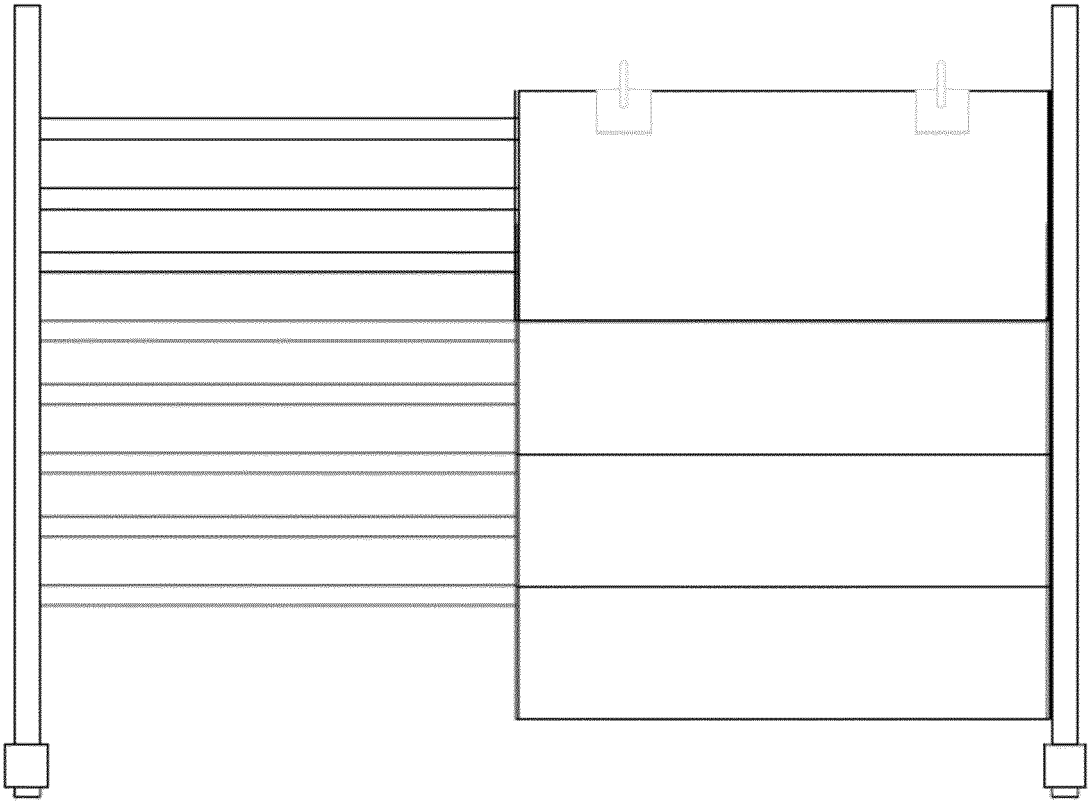
11. A dispenser according to any of claims 7 to 10, wherein the support member further comprises a carriage portion attached to the rear side of the guide surface, the carriage being slideably attached to the main body along its longitudinal axis; and/optionally wherein the carriage has a first channel located towards the top of the carriage and a second channel located towards the bottom of the carriage, each channel being configured to receive a first and second part of the main body respectively; and optionally wherein the first part of the main body comprises a first elongate member and the second part comprises a second elongate member; and optionally wherein the first elongate member is a first pole and the second elongate member is a second pole, the two poles being vertically and horizontally offset from each other; and optionally wherein the first pole is connected to a rearward region of the main body and the second pole is connected to a forward region of the main body and the first pole is located at a higher vertical position than the second pole such that connection of the support member with the first and second pole provides inclination of the guide surface of the support member.

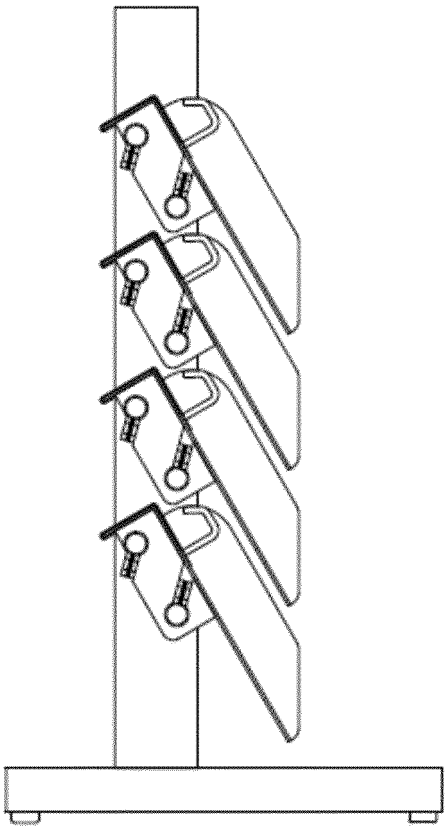
12. A dispenser according to any of claims 7 to 11, comprising a lock located on the support member for configuration between a first locked state prohibiting movement of the support member with respect to the main body and a second unlocked state permitting movement of the support member with respect to the main body; and/or wherein the main body is formed from a metal.

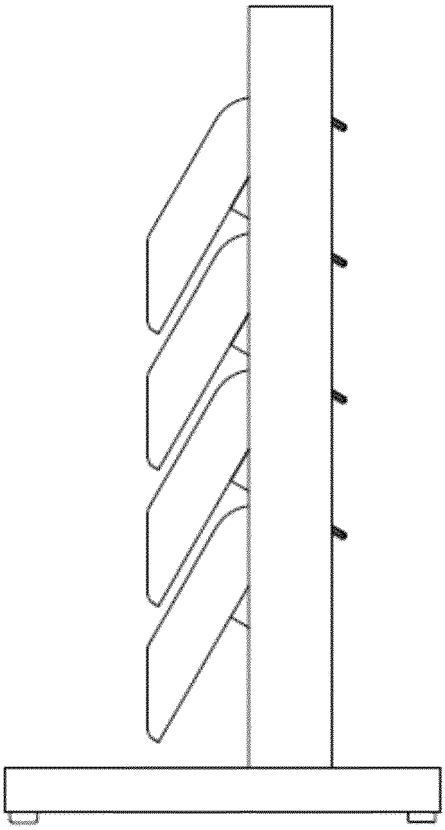
13. A packaging item for use in the system according to claim 1 comprising at least one pouch portion having a closeable opening, a connecting block portion, and at least one attachment means located in the block portion, wherein the pouch portion is releasably attached to the connecting block at a connection point.

14. A packaging item according to claim 13, wherein there further comprises a perforated junction at the connection point and/or wherein the pouch portion is a bag; and/or wherein the bag is formed of polythene.

15. A packaging item according to claim 13 or claim 14, wherein the connecting block is formed of polythene; and/or wherein the opening is sealable via a flap portion so as to seal the contents of the packaging item; and/or wherein the closeable opening is located proximal to the connection point.







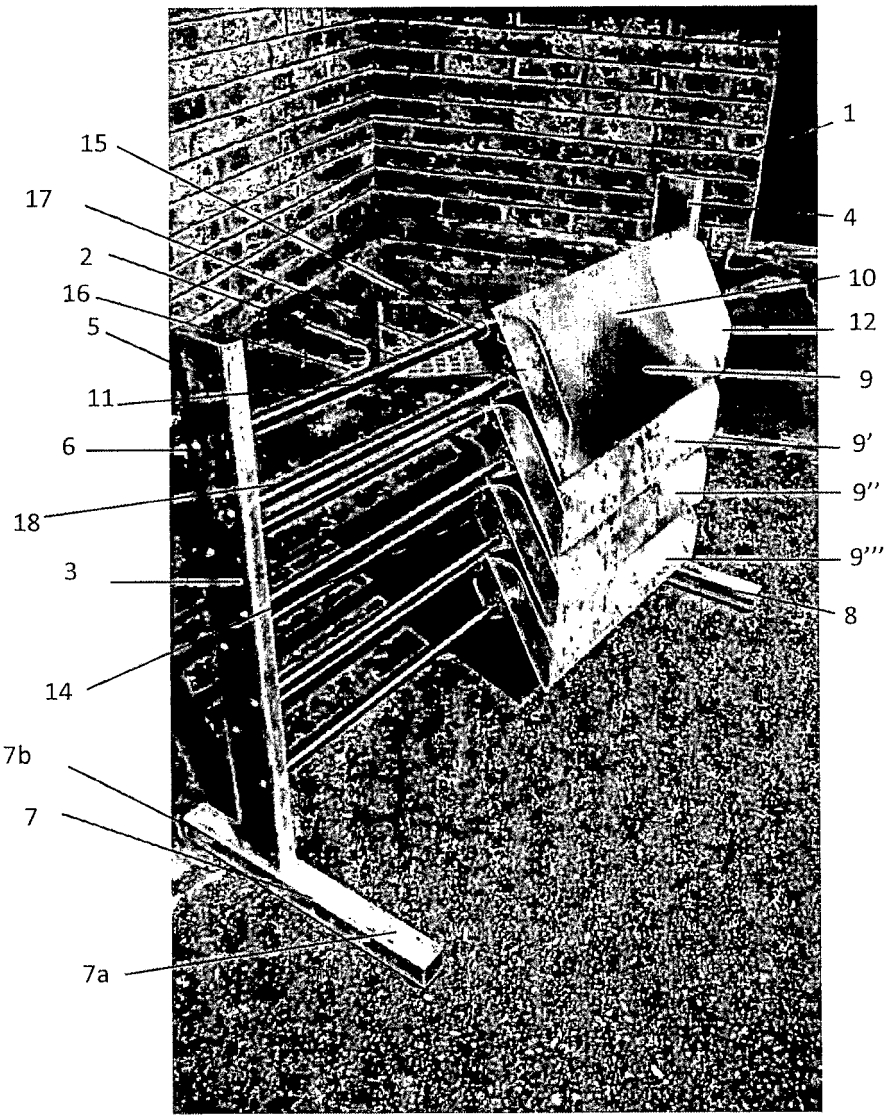


Fig. 1

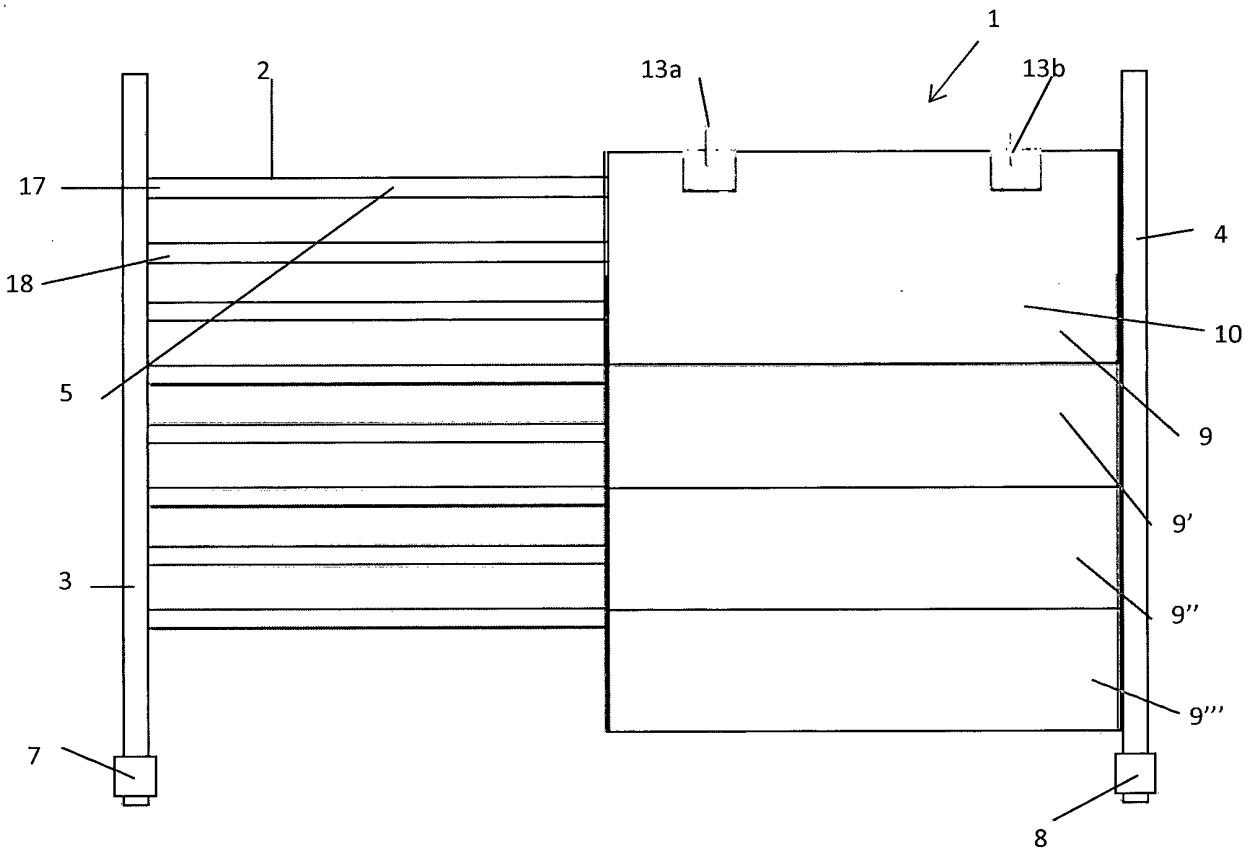


Fig. 2

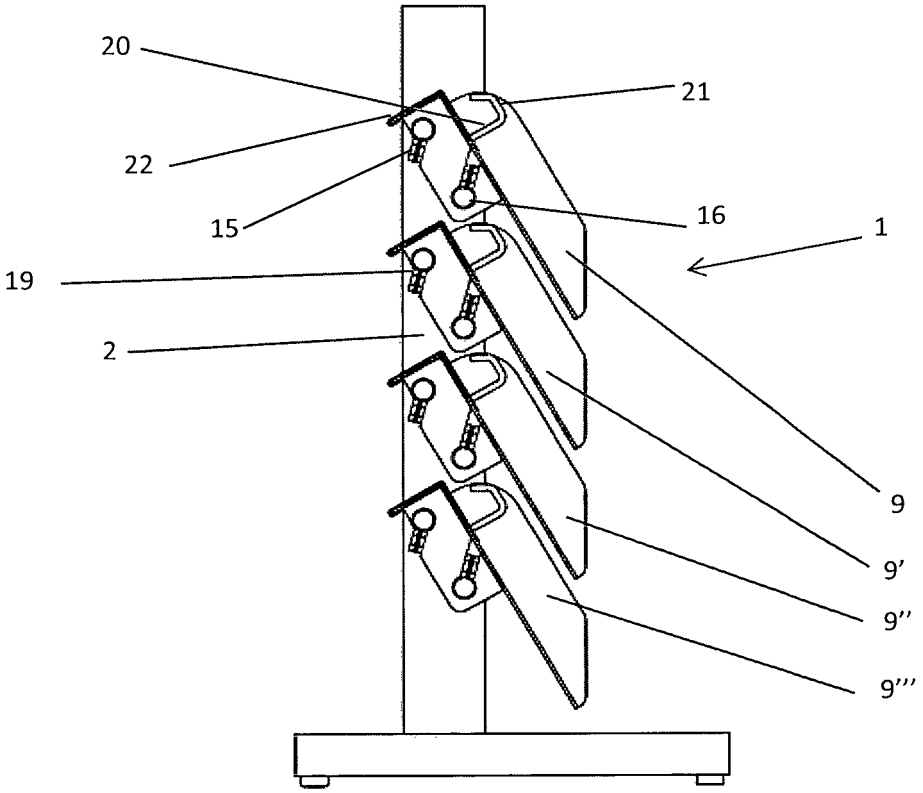


Fig. 3

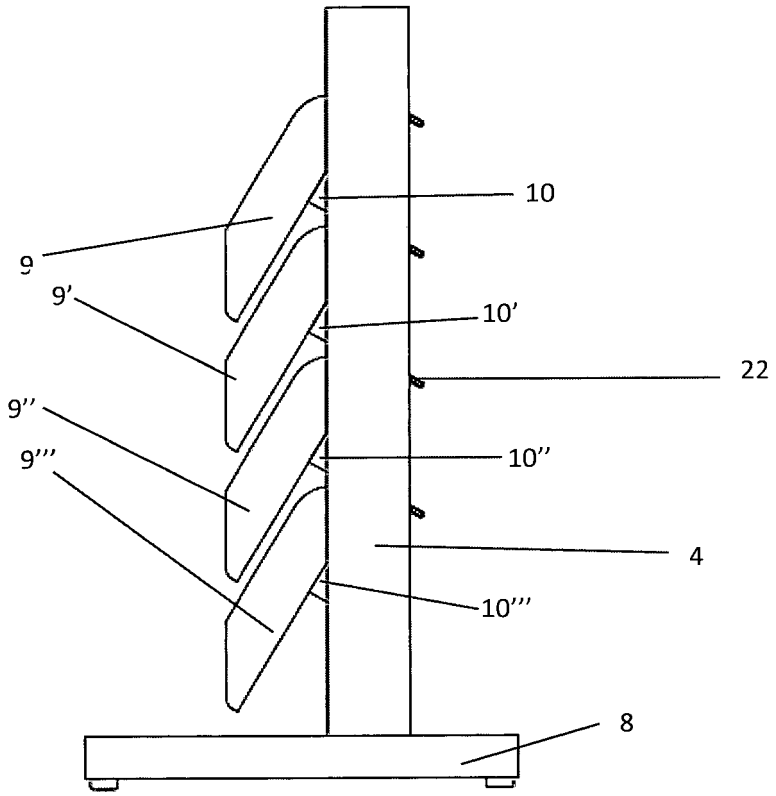


Fig. 4

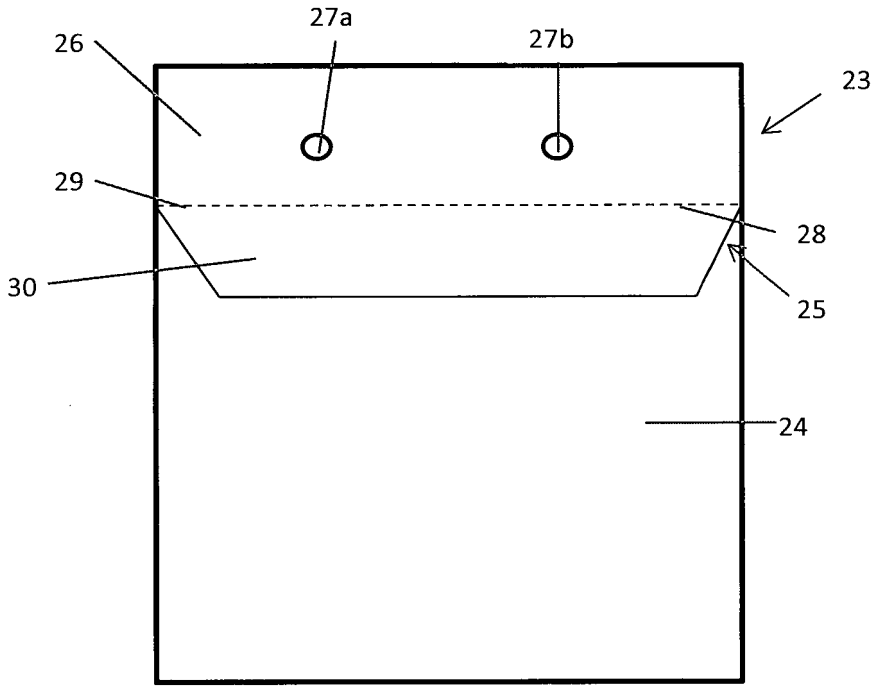


Fig. 5

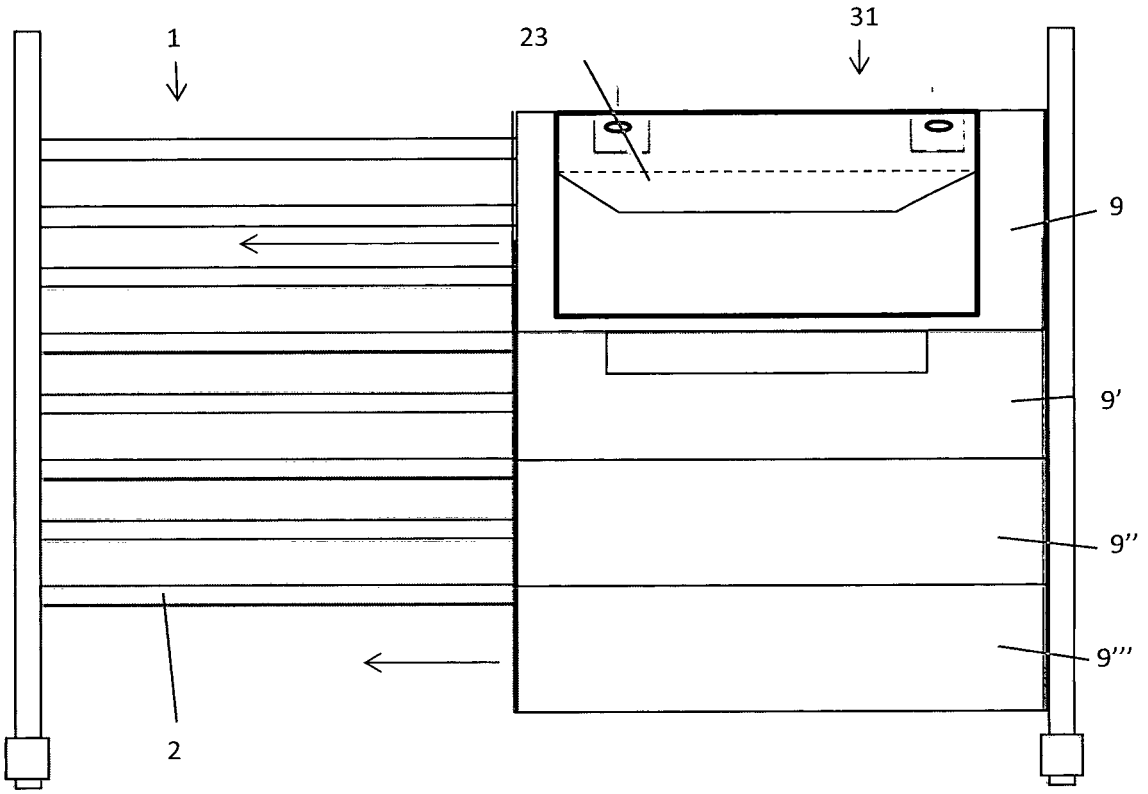


Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 17 16 7923

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 6 505 750 B1 (NGUYEN HANK D [US]) 14 January 2003 (2003-01-14) * the whole document *	1,7	INV. B65B67/12 B65D33/00 B65D33/14 B65D33/16
X	US 2004/252914 A1 (HSIANG CHIA [US]) 16 December 2004 (2004-12-16) * figures 1,2 *	13-15	
X	US 2006/204148 A1 (KOHN AL [US]) 14 September 2006 (2006-09-14) * figures 4,5 *	13-15	
A	US 5 924 573 A (PIRANEO CARMELO [US] ET AL) 20 July 1999 (1999-07-20) * figure 14 *	1,7	
A	WO 2014/137308 A1 (BEGIN ENDÜSTRIYEL MAKINE SAN TIC LTD STI [TR]) 12 September 2014 (2014-09-12) * figure 6 *	1,7	
A	US 5 269 416 A (DEMATTEIS ROBERT B [US]) 14 December 1993 (1993-12-14) * the whole document *	1,7	TECHNICAL FIELDS SEARCHED (IPC) B65B B65D B65H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	25 August 2017	Ungureanu, Mirela

CATEGORY OF CITED DOCUMENTS

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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
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25-08-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6505750 B1	14-01-2003	US 6505750 B1	14-01-2003
		US 6651832 B1	25-11-2003
		US 6729483 B1	04-05-2004
US 2004252914 A1	16-12-2004	NONE	
US 2006204148 A1	14-09-2006	NONE	
US 5924573 A	20-07-1999	US 5924573 A	20-07-1999
		US 5979841 A	09-11-1999
WO 2014137308 A1	12-09-2014	NONE	
US 5269416 A	14-12-1993	CA 2061855 A1	09-07-1993
		US 5269416 A	14-12-1993

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82