



(11) **EP 2 266 443 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
14.02.2018 Bulletin 2018/07

(51) Int Cl.:
A47F 9/04 (2006.01)

(21) Application number: **10166131.2**

(22) Date of filing: **16.06.2010**

(54) **Flexible checkout with possibility of rapid and simplified conversion from normal assisted use to self-checkout use and vice versa**

Flexible Kasse mit der Möglichkeit zum schnellen und einfachen Wechsel zwischen normaler, unterstützter Verwendung und der Verwendung als Selbstbedienungskasse und umgekehrt

Vérification flexible avec la possibilité d'une conversion rapide et simplifiée d'une utilisation normale assistée à une utilisation en self-service et inversement

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO SE SI SK SM TR**
Designated Extension States:
RS

(30) Priority: **24.06.2009 IT BO20090409**

(43) Date of publication of application:
29.12.2010 Bulletin 2010/52

(73) Proprietor: **CEFLA SOCIETA' COOPERATIVA
40026 Imola (BO) (IT)**

(72) Inventors:
• **Gaddoni, Stefano**
I-48022, Lugo, Province of Ravenna (IT)
• **Sicklinger, Andreas**
I-40026, Imola (IT)

(74) Representative: **Porsia, Attilio et al**
Succ. Ing. Fischetti & Weber
Via Caffaro 3/2
16124 Genova (IT)

(56) References cited:
EP-A2- 1 098 275 WO-A1-2009/033988
US-A- 3 990 540

EP 2 266 443 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The invention relates to checkouts used in supermarkets and other commercial premises, through which the customer is required to pass to identify and pay for the acquired goods. The traditional checkout was designed to handle both large amounts carried in trolleys and small amounts carried in baskets. The checkout is usually composed of three modules and comprises in succession a first unit formed by a horizontal conveyor belt on which the customer places the acquired goods, an intermediate unit, usually assisted on the inside by an assistant, where the traditional hardware is a scanner, a till, a printer, a keypad for electronic payments and a cash drawer for cash payments, and an end unit with a tray in which the assistant can deposit the scanned products and from which the customer bags the acquired products. In the version with a conveyor belt and a wide tray with a dividing bar, the traditional checkout reaches its maximum throughput capacity, since it allows simultaneous placing of goods on the belt and bagging of the goods by the customer.

[0002] In addition to the traditional checkouts noted above, there are now also so-called "self-checkout" systems, where it is the customer himself or herself who identifies and pays for the acquired goods. The most common self-checkouts still consist of three modules but are used to purchase a limited number of items, such as a maximum of twenty-five items, and for this purpose they have a unit for placing the basket in place of the initial conveyor belt and have a bagging unit in place of the tray. The dimensions of the intermediate scanning and payment unit are designed for use by a person on foot, the unit having a touch screen for the interface with the customer and automatic devices for cash and electronic payments. The bagging unit may optionally be equipped with checking scales to check that the bagged item corresponds to the scanned item. The layout of self-checkouts typically requires the installation of these machines in blocks of four units monitored by a roving assistant who keeps an eye on things and gives assistance.

[0003] Four self-checkout stations occupy roughly the same amount of space as two traditional checkouts and can therefore maintain roughly the same throughput capacity. The main difference is in the type of purchases handled. The most common self-checkouts can only handle purchases of a few products, usually no more than can be carried in one basket, whereas conventional checkouts can handle any type of purchase. The economic advantage of having self-checkouts must therefore be weighed against the lower throughput capacity of the point of sale for an equivalent footprint of the row of checkouts. The documents EP1098275A2 and US 3990540A describe known checkouts.

[0004] The applicant has observed the lack on the market of a flexible, easily convertible checkout that can give the point of sale the ability to offer the advantages of both the traditional checkout and the self-checkout.

This kind of convertible checkout according to the invention would have the aim of offering customers better service, giving greater flexibility in the use of the row of checkouts, and allow a reduction in staffing costs without reducing the throughput capacity of said row of checkouts. Such a checkout would be particularly suitable for points of sale that do not have a large number of checkouts, in which there must be some assisted checkouts, and in which there is often a need to cover time periods frequented by customers who purchase only a few products, who are in a hurry, and for which it is not financially justifiable to open another assisted checkout.

To meet these requirements, the invention provides an easily and quickly convertible checkout that can be set up to be used mostly in the self-checkout mode but which on occasion can easily and quickly be converted into a checkout for use in "assisted" mode at peak times and/or timeslots and/or situations in which it is judged suitable and remunerative to also offer the customer human contact with an assistant.

The convertible checkout, which imitates a traditional layout, should not have connections to the installed units and could, especially at small points of sale, have remote monitoring by an operator who intervenes if necessary and with assisted tills or other devices (video cameras, automatic exit gates) for theft deterrence.

[0005] The features of the invention are summarized in the accompanying Claim 1 and its dependent claims and are based on the following concept. In a checkout of traditional type, that comprises in operational succession the three aforementioned units - the conveyor belt on which the products are loaded, the intermediate scanning and payment unit, and the end tray where the checked products are collected - the invention provides for said intermediate scanning unit to be used by an assistant (assisted use mode), or, on the same side as that used by the assistant, directly by the customer (self-checkout use mode), neutralizing in the latter case the architectural volume occupied by the end tray where the goods are collected, by displacing this unit by rotation or pivoting and/or by a translational movement, in such a way as to create downstream of said intermediate unit enough free space to allow the customer to comfortably bag his or her acquired goods previously identified by the scanner. When the checkout is being used in self-checkout mode, the customer places the products on the initial conveyor belt, reads the barcode of each product at the intermediate unit, where a dedicated software interface will be available for use of the checkout in self-checkout mode, for payment and other purposes, and bags said products in the end space which is now not taken up by the tray.

[0006] Other features of the invention, and the advantages which it procures, will be made clearer by the following description of certain preferred embodiments of said invention, illustrated purely by way of non-restrictive example in the figures of the accompanying sheets of drawings, in which:

- Figures 1 and 1a are a perspective view and a top plan view, respectively, of three checkouts according to the invention, side by side, of the type with conversion by rotation, only one of which is in the self-checkout use mode;
- Figures 2 and 2a are a perspective view and a top plan view, respectively, of three checkouts according to the invention, side by side, of the type with conversion by translational movement, only one of these being in the self-checkout use mode;
- Figures 3 and 4 are a perspective view and a side elevation with parts in section, respectively, of the frame supporting the end tray of the checkout in the conversion by rotation, viewed first in the assisted-use mode and then in the self-checkout use mode of said checkout.
- Figures 5 and 6 are a side elevation and a perspective view, respectively, of the frame supporting the end tray of the checkout with conversion by translational movement, viewed in the self-checkout use mode of said checkout.

[0007] In Figures 1 and 1a, references B1, B2 and B3 are three identical checkouts of the present type, arranged side by side and parallel with each other to form the exit barrier from the point of sale, through which customers must pass in order to pay for their acquired goods. Each checkout comprises an initial conveyor belt T, which is horizontal and usually motorized, on which the customer places the acquired goods; an intermediate unit C with scanner, till, printer, an automatic device for cash payments, a keypad for electronic payments and a touch screen interface for use in both assisted and self-checkout modes; and an end tray V which in the present example is of the wide type, with an intermediate dividing pivoting bar P for dividing the tray into two parts, although it can be of any suitable type. The drive to the conveyor belt T is usually stopped by a photoelectric cell positioned in a known manner upstream of the intermediate unit C.

[0008] The checkouts B1 and B3 are shown in the assisted use mode, with an assistant CS sitting at the intermediate unit C with his or her cash drawer in the dedicated space of this unit C. The assistant occupies a space bounded on the left by part of the tray V, in front by the unit C, and on the right by a unit M which may stand on wheels or runners or which may be connected laterally to the frame of the conveyor belt, with the option of being swung out of the way and in front of which a pre-checkout display E may be located, as shown next to the checkout B3. In a constructional variant, the unit M may be absent, leaving the space required for the assistant's effects in retractable drawers in the forward leg of the supporting frame. The intermediate checkout B2, unlike checkouts B1 and B3, is shown in the self-checkout use mode, to which it has been converted by the following rapid sequence of operations:

- the end tray V has been rotated through 90° about

the longitudinal axis of the checkout, by lifting the portion which previously was next to the assistant and which is now open for the customer Z to pass through;

- the unit M, if present, may have been inserted underneath the conveyor belt T, or may be located at the start of this unit, to support the basket of purchases, while the goods are being extracted from the basket and placed on said conveyor belt;
- in the space freed up by lifting the tray V out of the way, bags are held, while being filled with products, by bag holders mounted on an optional weighing pan to check their weight and thus verify that what has been scanned and bagged is correct. In another variant, bag holding arms A may be located underneath the tray;
- dedicated software for the self-checkout use mode of the checkout is activated so that the customer Z, after placing the goods on the conveyor belt T, can stand next to the intermediate unit C, on the side previously occupied by the assistant, in order to scan the barcodes of the individual acquired goods on his own or her own, before placing them in the bags S. After scanning and bagging them, the customer will work through the payment protocol, which may vary depending on the case. If problems occur during the scanning and bagging phase, help and/or alarm procedures will be activated as appropriate.

[0009] Figures 3 and 4 show that in one possible embodiment the end tray V is housed in a frame 1 with handholds 2 on the longitudinal sides and which has, in the middle of the transverse sides, mutually aligned integral brackets 3, which may for example be of a C-shaped profile, whose ends outside of the frame 1 are pivoted at 4 to triangular gusset plates 5 attached by their base to the innermost 206 of three telescopic tracks 6, 106, 206, the outermost track of which is attached to the top 107 of a base frame 7 which stands on the floor via a bottom 207 and has at least one cross member 307 interconnecting the two symmetrical parts of the frame. The frame 7 is designed for connection to the adjacent parts of the frame of the checkout in any suitable way. When the tray V is in the horizontal position of use, as in Figure 3 and as shown in chain line in Figure 4, the system of tracks 6, 106, 206 is in the position of maximum extension and the frame 1 is kept horizontal by the articulation of its end brackets 8 with lever arms 9 hinged to brackets 10 on the crossmember 307 of the base frame 7. To avoid unwanted movements of the frame 1 in the condition depicted in Figure 3, locking means, not shown but easy for a skilled person to devise, may be used. When these optional locking means are neutralized and the frame 1 is pushed in the direction indicated in Figure 3 by arrow F, the frame moves towards the base frame 7, the telescopic tracks 6, 106, 206 gradually retract into each other, all inside the fixed track 6, and at the same time the frame 1 swings down at the end connected to the lever arms 9

and swings up at the opposite end, until it is in the vertical position shown in Figure 4 in solid lines, in which the checkout can be used in the self-checkout mode, as indicated with reference to Figures 1 and 1a. Safety means (not shown) can be provided to lock the frame 1 in the Figure 4 position.

[0010] Figures 2 and 2a illustrate a variant of the checkout according to the invention, in which the end comprises the V' tray where the goods are collected in the assisted-use mode. This tray is not wide as in the previous version. Next to it is a shelf R which forms with the tray a single body connected to the part upstream of the checkout track and slider means that allow this end unit V'-R to perform a defined horizontal movement of transverse translation such that, when the checkouts are in the assisted position, as at B1 and B3, said tray V' is aligned with the central unit C, whereas when the checkout is in the self-checkout use mode, as illustrated by the intermediate checkout B2, it is the shelf R which is aligned with the central unit C, and the tray V' is in the displaced position and not in use. In this version the shelf R may advantageously include a weighing unit which monitors the weight of the purchases so as to check whether the weight does or does not correspond to the weight of the products whose barcodes the customer has read on the scanner of the central unit.

[0011] As regards all the other parts which go to make up the checkout in the version shown in Figures 2 and 2a and oversee its operation, the same applies to these as applies to the checkout in the version shown in Figures 1 and 1 a.

[0012] In Figures 5 and 6, reference 11 denotes an end part of the frame of the intermediate unit C, which comprises the vertical wall 111 with an intermediate transverse bracket 12, and a bottom transverse bracket 112, both of U profile, the outward flange of each supporting corresponding track and slider assemblies 13, 113. Said wall 111 has an integral horizontal bottom extension 211 which stands on the floor via feet (not shown) and which has on the outermost edge another track and slider assembly 213 parallel to the aforementioned assemblies 13, 113. The moving part of these track and slider assemblies is connected to the frame 14, which is shaped like two steps, the top step of which carries the horizontal frame 15 for the tray V' and the bottom step of which carries the aforementioned shelf R. Wheels (not illustrated) may be provided at the opposite ends of the moving frame 14 in order to rest on the floor and support that end of this frame which will sometimes project from the fixed supporting walls 111, 211.

[0013] In both of the illustrated versions, converting the checkout does not require conversions and other interventions on the intermediate unit C containing the electronic parts, thus greatly simplifying its construction and its cost and improving the functional reliability of the entire checkout.

Claims

1. Checkout designed to give flexibility of use to the row of checkouts, with the possibility of rapid and simplified conversion from normal assisted use to self-checkout use and vice versa, of the type that comprises in operational sequence a conveyor belt (T) on which the products are loaded, an intermediate scanning and payment unit (C), and an end tray (V, V') where the checked products are collected in normal assisted check-out mode, which checkout comprises:

- In combination with the checkout a first and a second passageways for customer extending each along one of two opposite sides of the checkout;
- One of the two passage ways being alternatively occupied by the assistant (CS), while the other passageway being destined to the passing of the customer in the assisted mode;
- means comprising a scanner, a till, a printer, an automatic device for cash payments a keypad for electronic payments and a touch screen interface being used in both assisted and self-checkout modes and a dedicated self-checkout software interface allowing the customer in the self-checkout mode to place the acquired products on the initial conveyor belt (T), read the barcode of each product at the intermediate unit, to pay the cost of the purchases by an agreed means and to bag the products after the scanning phase in an end space;
- the said end space being an area immediately downstream of said intermediate unit (C); **characterized in that** it comprises means allowing said intermediate unit (C) to be used alternatively by the assistant in the assisted check-out mode or in the self-checkout mode, directly by the customer on the same side as that occupied by the assistant in the assisted check-out mode; and **in that**
- the said end tray (V,V') being fitted with means for displacing it by rotation, or pivoting and/or translation from a position in which it occupies the said area to an out-of-the-way position in which the end tray has been moved away from the said area.

2. Checkout according to claim 1, wherein in that the tray (V) is housed in a supporting frame (1) which is fitted, in the middle of the transverse sides, with mutually aligned brackets (3), whose ends outside of said frame are pivoted to gusset plates (5) attached to the innermost (206) of three telescopic tracks (6, 106, 206), the outermost track of which is attached to the top (107) of a supporting frame (7), which stands on the floor via a bottom (207), with at least

- one cross member (307) interconnecting the two symmetrical parts of the frame which is designed for connection to the adjacent parts of the frame of the checkout, the arrangement being such that when the tray (V, V') is in the horizontal position of use, said system of tracks (6, 106, 206) is in the position of maximum extension and the frame (1) is kept horizontal by the articulation of its end lugs (8) with lever arms (9) hinged to brackets (10) on the cross member (307) of said supporting frame (7); the whole being such that when the frame (1) with the tray is pushed in the transverse direction away from the space which is required to be free for use of the checkout in the self-checkout mode, said frame (1) moves towards its supporting frame (7), the telescopic tracks (6, 106, 206) gradually retract into each other, all inside the fixed track (6), while said frame with the tray swings down at the end connected to said lever arms (9) and up at the opposite end, until it is in the out-of-the-way position in which the checkout can be used in the self-checkout mode.
3. Checkout according to Claim 1, in which said end tray (V, V') displacing means are such that the tray (V) can also be of the wide type and is supported by means (7) such that from the usual horizontal position said tray can be rotated about a longitudinal axis and simultaneously translated parallel to this axis until it is in an essentially vertical and external position, releasing a large amount of space downstream of the central scanning unit (C), on the side along which the customer is moving, to give the latter good freedom of movement when bagging the goods and when the checkout is being used in the self-checkout mode.
4. Checkout according to Claim 2, in which arms (A) may be arranged underneath the tray (V) to hold bags (S) in an open position, facilitating their filling with the goods acquired by the customer when the customer is using the checkout in the self-checkout mode.
5. Checkout according to Claim 1, in which said translational displacing means have the tray (V') housed in a supporting frame connected to the adjacent frame of the central unit (C) by means of transverse displacement tracks (13, 113, 213), so that from the position of alignment with this central unit, for use in the assisted mode, said tray (V') can be moved out translationally to free up a large amount of space downstream of the central scanning unit (C), on the side along which the customer is moving, to give the latter good freedom of movement when bagging the products during the use of the checkout in the self-checkout mode.
6. Checkout according to Claim 5, in which a shelf (R) may be located on the same frame which carries the tray (V'), at the side of this tray and of the same height as, or preferably lower than, said tray, so that when the checkout is in the self-checkout use mode, this shelf is downstream of and in line with the central scanning unit (C) and can usefully be used to hold the bags when the customer is filling them with the acquired goods.
7. Checkout according to Claim 6, in which the end part of the frame (11) of the intermediate scanning unit (C) comprises a vertical wall (111) with a lower horizontal extension (211), on which walls there are mounted, by means of transverse brackets (12, 112) and partly directly, track and slider assemblies (13, 113, 213) in which the moving part is connected to a stepped frame (14), the top step of which carries the horizontal frame (15) for the tray (V') and the bottom step of which carries said shelf (R), it being possible for wheels to be fitted underneath the opposite ends of said moving frame (14) in order to rest on the floor and support that part of this frame which will sometimes project away from said fixed supporting walls (111, 211).
8. Method for the use of the checkout according to claims 17.

Patentansprüche

1. Eine Kasse, die einer Reihe von Kassen die entsprechende Verwendungsflexibilität verleiht, mit der Möglichkeit zum schnellen und einfachen Wechsel zwischen normaler unterstützter Verwendung und der Verwendung als Selbstbedienungskasse und umgekehrt, des Typs, welcher in der Betriebsabfolge jeweils ein Fließband (T), auf das die Produkte geladen werden, eine Zwischen-Abtast- und Zahlungseinheit (C) und eine Endablage (V, V') umfasst, auf der die geprüften Produkte in normalem unterstütztem Kassenmodus gesammelt werden, wobei diese Kasse folgendes umfasst:
- Zusammen mit der Kasse einen ersten und zweiten Durchgang für Kunden, welcher sich entlang von zwei gegenüberliegenden Seiten der Kasse erstreckt;
 - wobei einer der beiden Durchgänge jeweils wahlweise von dem Mitarbeiter (CS) eingenommen wird, während der andere Durchgang für das Durchgehen des Kunden in unterstütztem Modus vorgesehen ist;
 - Elemente, welche einen Scanner, eine Registrierkasse, einen Drucker, eine automatische Vorrichtung für Barzahlungen, eine Tastatur für elektronische Zahlungen und einen Berührungsbildschirm-Schnittstelle umfassen, die so-

wohl unterstützt als auch im Selbstbedienungsmodus verwendet werden können, sowie eine dedizierte Selbstbedienungskassensoftware-Schnittstelle, die den Kunden im Selbstbedienungsmodus in die Lage versetzt, die erworbenen Produkte auf das erste Fließband (T) zu legen, den Balkencode jedes Produkts an der Zwischen-
 5 einheit abzulesen, den Preis der Einkäufe per vereinbarem Mittel zu zahlen und die Produkte nach der Abtastphase in einem Endbereich einzupacken;

- wobei es sich bei dem genannten Endbereich jeweils um einen Bereich handelt, der unmittelbar hinter der genannten Zwischeneinheit (C) liegt;
 10 15

dadurch gekennzeichnet, dass sie Elemente umfasst, welche die genannte Zwischeneinheit (C) in die Lage versetzt, von dem Mitarbeiter wahlweise in der unterstützten oder der Selbstbedienungsver-
 20 wendung direkt durch den Kunden genutzt zu werden, und zwar an derselben Seite wie die, die vom Mitarbeiter im unterstützten Kassenmodus eingenommen wird; sowie dadurch, dass

- die genannte Endablage (V, V') jeweils ausgestattet ist mit entsprechenden Elementen, mit Hilfe derer sie durch Drehen oder Schwenken und/oder Verschieben von einer Stellung, in der sie den genannten Bereich einnimmt, zu einer
 25 30 abseits gelegenen Stellung verstellt werden kann, bei der die Endablage von dem genannten Bereich wegbewegt worden ist.

2. Eine Kasse gemäß Anspruch 1, wobei die Ablage (V) in einem Tragrahmen (1) untergebracht ist, welcher in der Mitte der Querseiten jeweils mit miteinander ausgerichteten Klammern (3) ausgestattet ist, deren Enden außerhalb des genannten Rahmens drehbar auf Winkelstücken (5) gelagert sind, die jeweils an der innersten (206) von drei teleskopischen Führungsbahnen (6, 106, 206) befestigt sind, deren äußerste Bahn an der Spitze (107) eines Tragrahmens (7) befestigt ist, welcher mit Hilfe eines Unter-
 40 teils (207) auf dem Boden steht, mit mindestens einem Querträger (307), der die beiden symmetrischen Teile des Rahmens miteinander verbindet, der für die Verbindung mit den anliegenden Teilen des Rahmens der Kasse bestimmt ist, wobei die Anordnung jeweils so gearret ist, dass, wenn die Ablage (V, V') sich in der horizontalen Verwendungsstellung befindet, das genannte Führungsbahnsystem (6, 106, 206) sich in der Stellung seiner maximalen Ausdehnung befindet und der Rahmen (1) waagrecht gehalten wird durch das Gelenk seiner Endhaltevori-
 50 55 richtungen (8) mit Hebelarmen (9), welche jeweils drehbar in Klammern (10) am Querträger (307) des genannten Tragrahmens (7) eingehängt sind; wobei

das Ganze so gearret ist, dass, wenn der Rahmen (1) mit der Ablage in die Querrichtung geschoben wird, und zwar weg von dem Raum, der benötigt wird, um frei für die Kasse im Selbstbedienungsmodus zu sein, sich der genannte Rahmen (1) in Richtung seines Tragrahmens (7) bewegt, die teleskopischen Führungsbahnen (6, 106, 206) sich schrittweise ineinander zurückziehen, und zwar alle ins Innere der feststehenden Bahn (6), während der genannte Rahmen mit der Ablage nach unten zum Ende schwenkt, das mit dem genannten Hebelarmen (9) verbunden ist, und nach oben zu dem entgegengesetzten Ende, bis er sich in der Abseitsstellung befindet, in der die Kasse im Selbstbedienungsmodus verwendet werden kann.

3. Eine Kasse gemäß Anspruch 1, wobei die genannten Endablage (V, V')-Verstellungselemente so beschaffen sind, dass die Ablage (V) auch vom breiten Typ sein kann und getragen wird durch Elemente (7), die so beschaffen sind, dass die genannte Ablage von der gewöhnlichen horizontalen Stellung um eine Längsachse gedreht werden und gleichzeitig parallel zu dieser Achse verschoben werden kann, bis sie sich in einer im wesentlichen senkrechten und äußeren Stellung befindet, wobei sie unterhalb der zentralen Abtasteinheit (C), an der Seite entlang derer sich der Kunde bewegt, einen größeren Bereich freilässt, um letzterem die nötige Bewegungsfreiheit zu lassen, wenn er seine Waren einpackt und die Kasse im Selbstbedienungsmodus verwendet wird.
4. Eine Kasse gemäß Anspruch 2, wobei jeweils entsprechende Arme (A) unterhalb der Ablage (V) angeordnet werden können, um die Taschen (S) offen zu halten und das Einfüllen der vom Kunden erworbenen Waren zu vereinfachen, wenn der Kunde die Kasse im Selbstbedienungsmodus verwendet.
5. Eine Kasse gemäß Anspruch 1, wobei die genannten translatorischen Verstellungselemente jeweils eine Ablage (V') aufweisen, die in einem Tragrahmen untergebracht ist, welcher mit dem anliegenden Rahmen der zentralen Einheit (C) durch Querverschiebungsbahnen (13, 113, 213) verbunden ist, so dass die genannte Ablage (V') von der mit der zentralen Einheit ausgerichteten Stellung zur Verwendung im Selbstbedienungsmodus translatorisch bewegt werden kann, um einen größeren Bereich hinter der zentralen Abtasteinheit (C) freizulassen, und zwar jeweils an der Seite, entlang derer sich der Kunde bewegt, um letzterem ausreichende Bewegungsfreiheit zu lassen, wenn er die Produkte während der Verwendung der Kasse im Selbstbedienungsmodus einpackt.
6. Eine Kasse gemäß Anspruch 5, bei der ein Bord (R) an dem selben Rahmen angeordnet werden kann,

der die Ablage (V') trägt, und zwar an der Seite dieser Ablage und in derselben Höhe wie bzw. vorzugsweise niedriger als die genannte Ablage, so dass dieses Bord, wenn die Kasse sich im Selbstbedienungsmodus befindet, sich hinter und ausgerichtet mit der zentralen Abtasteinheit (C) befindet und nutzbringend verwendet werden kann, um die Taschen zu halten, wenn der Kunde sie mit den erworbenen Waren füllt.

7. Eine Kasse gemäß Anspruch 6, bei der der Endbereich des Rahmens (11) der Zwischen-Abtasteinheit (C) eine senkrechte Wand (111) umfasst, mit einer niedrigeren horizontalen Verlängerung (211); an diesen Wänden sind mit Hilfe entsprechender Querkammern (12, 112) und teilweise direkt Bahn- und Schiebereinheiten (13, 113, 213) montiert, wobei der bewegliche Teil mit einem gestuften Rahmen (14) verbunden ist, dessen obere Stufe den horizontalen Rahmen (15) für die Ablage (V') trägt, und dessen untere Stufe das genannte Bord (R) trägt, wobei es jeweils möglich ist, entsprechende Räder unterhalb der entgegengesetzten Enden des genannten beweglichen Rahmens (14) zu montieren, die auf dem Boden ruhen und dadurch den Teil des Rahmens stützen, welcher manchmal über die genannten feststehenden Tragwände (111, 211) hinausragt.

8. Eine Methode zur Verwendung der Kasse gemäß Ansprüche 1 und 7.

Revendications

1. Caisse conçue pour offrir une flexibilité d'utilisation à la rangée de caisses, avec la possibilité de conversion rapide et simplifiée d'une utilisation assistée normale à une utilisation en self-service et inversement, du type qui comprend, dans la séquence opérationnelle, une bande transporteuse (T) sur laquelle les produits sont chargés, une unité intermédiaire de balayage et de paiement (C) et un plateau terminal (V, V') où les produits vérifiés sont collectés dans un mode de caisse assistée normale, laquelle caisse comprend :
- en combinaison avec la caisse, un premier et un deuxième couloirs pour client s'étendant chacun le long d'un de deux côtés opposés de la caisse ;
 - un des deux couloirs étant occupé de manière alternative par l'assistant (CS), alors que l'autre couloir est destiné au passage du client dans le mode assisté ;
 - des moyens comprenant un dispositif de balayage, une caisse, une imprimante, un dispositif automatique pour des paiements en espèces, un clavier pour des paiements électroni-

ques et une interface à écran tactile qui est utilisée à la fois dans les modes de caisse assistée et en self-service et une interface logicielle de caisse en self-service dédiée permettant au client dans le mode de caisse en self-service de placer les produits achetés sur la bande transporteuse initiale (T), lire le code à barres de chaque produit au niveau de l'unité intermédiaire, payer le prix des achats par un moyen convenu et mettre en sac les produits après la phase de balayage dans un espace terminal ;
- ledit espace terminal étant une zone immédiatement en aval de ladite unité intermédiaire (C) ;

caractérisée en ce qu'elle comprend des moyens permettant à ladite unité intermédiaire (C) d'être utilisée de manière alternative par l'assistant dans le mode de caisse assistée ou dans le mode de caisse en self-service, directement par le client du même côté que celui occupé par l'assistant dans le mode de caisse assistée ;

et en ce que ledit plateau terminal (V, V') est équipé de moyens pour le déplacer par rotation, ou par pivotement et/ou par translation, d'une position dans laquelle il occupe ladite zone à une position hors passage dans laquelle le plateau terminal a été éloigné de ladite zone.

2. Caisse selon la revendication 1, dans laquelle le plateau (V) est logé dans un châssis de support (1) qui est équipé, au milieu de ses côtés transversaux, d'étriers mutuellement alignés (3), dont des extrémités à l'extérieur dudit châssis sont pivotées sur des plaques-goussets (5) fixées à celui le plus interne (206) de trois rails télescopiques (6, 106, 206), dont le rail le plus externe est fixé au dessus (107) d'un châssis de support (7), qui repose sur le sol par l'intermédiaire d'un dessous (207), avec au moins une traverse (307) interconnectant les deux parties symétriques du châssis qui est conçu pour la connexion aux parties adjacentes du châssis de la caisse, l'agencement étant tel que, quand le plateau (V, V') est dans la position horizontale d'utilisation, ledit système de rails (6, 106, 206) est dans la position d'extension maximale et le châssis (1) est maintenu horizontal par l'articulation de ses pattes d'extrémité (8) avec des bras de levier (9) articulés avec des étriers (10) sur la traverse (307) dudit châssis de support (7) ; l'ensemble étant tel que, quand le châssis (1) avec le plateau est poussé dans la direction transversale loin de l'espace qui doit être libre pour l'utilisation de la caisse dans le mode de caisse en self-service, ledit châssis (1) se déplace vers son châssis de support (7), les rails télescopiques (6, 106, 206) se retirent progressivement l'un dans l'autre, tous à l'intérieur du rail fixe (6), alors que ledit châssis avec le plateau pivote vers le bas à l'extrémité connectée auxdits bras de levier (9) et vers le

haut à l'extrémité opposée, jusqu'à ce qu'il soit dans la position hors passage dans laquelle la caisse peut être utilisée dans le mode de caisse en self-service.

3. Caisse selon la revendication 1, dans laquelle lesdits moyens de déplacement du plateau (V, V') sont tels que le plateau (V) puisse également être du type large et soit supporté par des moyens (7) de manière que, à partir de la position horizontale habituelle, ledit plateau puisse être tourné autour d'un axe longitudinal et déplacé simultanément par translation parallèlement à cet axe jusqu'à ce qu'il soit dans une position externe et sensiblement verticale, en libérant une grande quantité d'espace en aval de l'unité de balayage centrale (C), du côté le long duquel le client se déplace, pour offrir à ce dernier une bonne liberté de mouvement durant la mise en sac des marchandises et quand la caisse est utilisée dans le mode de caisse en self-service. 5
10
4. Caisse selon la revendication 2, dans laquelle des bras (A) peuvent être agencés au-dessous du plateau (V) pour maintenir des sacs (S) dans une position ouverte, en facilitant leur remplissage avec les marchandises achetées par le client quand le client utilise la caisse dans le mode de caisse en self-service. 20
25
5. Caisse selon la revendication 1, dans laquelle lesdits moyens de déplacement en translation comportent le plateau (V') logé dans un châssis de support connecté à un châssis adjacent de l'unité centrale (C) au moyen de rails de déplacement transversal (13, 113, 213), de manière qu'à partir de la position d'alignement avec cette unité centrale, pour l'utilisation dans le mode assisté, ledit plateau (V') puisse être retiré par translation pour libérer une grande quantité d'espace en aval de l'unité de balayage centrale (C), du côté le long duquel le client se déplace, pour offrir à ce dernier une bonne liberté de mouvement durant la mise en sac des produits durant l'utilisation de la caisse dans le mode de caisse en self-service. 30
35
40
6. Caisse selon la revendication 5, dans laquelle une étagère (R) peut être positionnée sur le même châssis qui porte le plateau (V'), sur le côté de ce plateau et à la même hauteur, ou de préférence plus basse, que ledit plateau, de manière que, quand la caisse est dans le mode de caisse en self-service, cette étagère soit en aval de et alignée avec l'unité de balayage centrale (C) et puisse être utilisée de manière utile pour maintenir les sacs quand le client les remplit avec les marchandises achetées. 45
50
7. Caisse selon la revendication 6, dans laquelle la partie terminale du châssis (11) de l'unité de balayage intermédiaire (C) comprend une paroi verticale (111) avec une extension horizontale (211), ces parois sur 55

lesquelles sont montés, au moyens de supports transversaux (12, 112) et en partie directement, des ensembles de glissière et coulisseau (13, 113, 213) dans lesquels la partie mobile est connectée à un châssis étagé (14), dont l'étagé supérieur supporte le châssis horizontal (15) pour le plateau (V') et dont l'étagé inférieur supporte ladite étagère (R), étant ainsi possible de monter des roues au-dessous des extrémités opposées dudit châssis mobile (14) de manière à reposer sur le sol et supporter cette partie du châssis qui sera parfois projetée loin desdites parois de support fixes (111, 211).

8. Procédé pour l'utilisation de la caisse selon l'une quelconque des revendications 1 à 7. 15

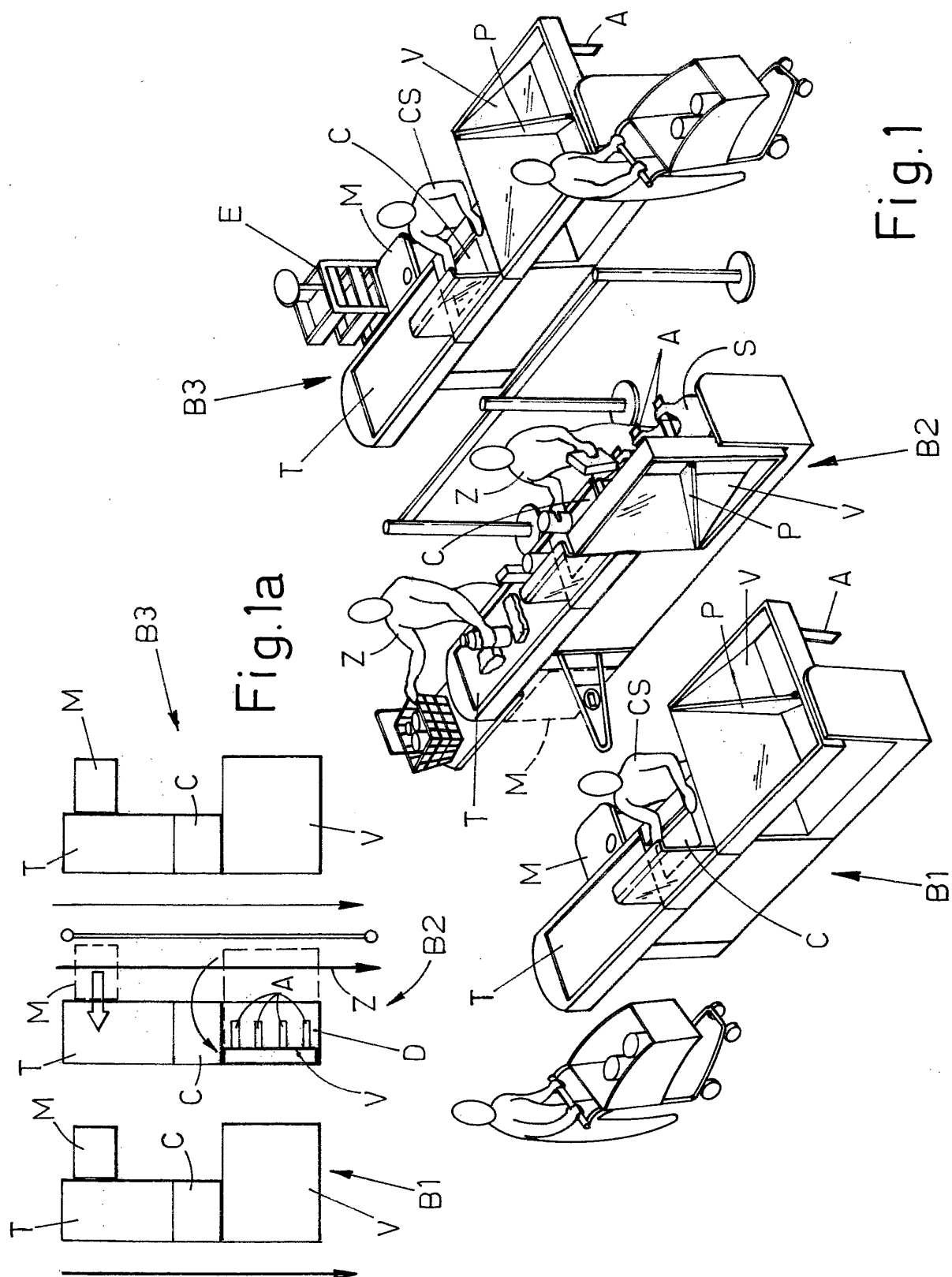
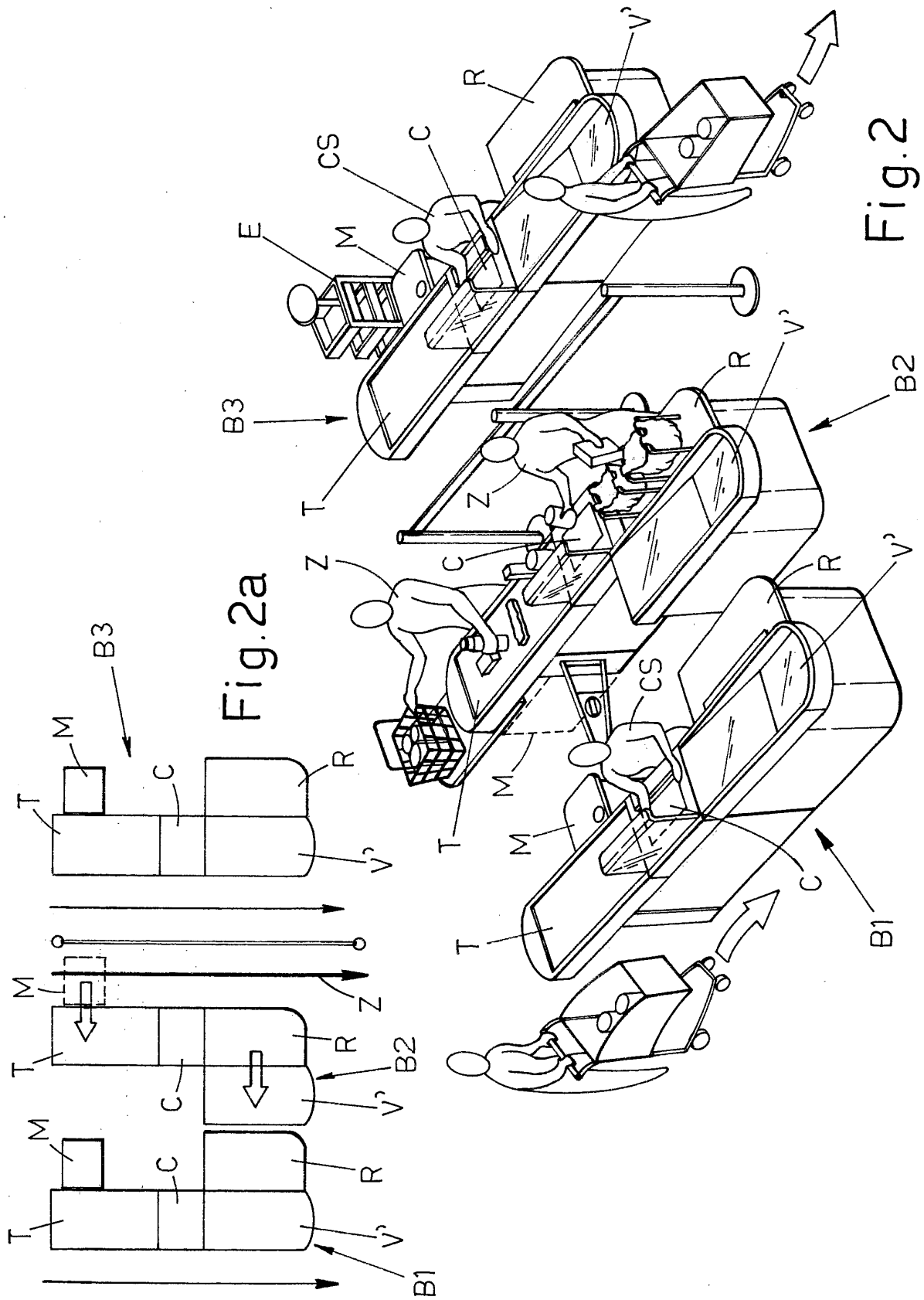


Fig.1



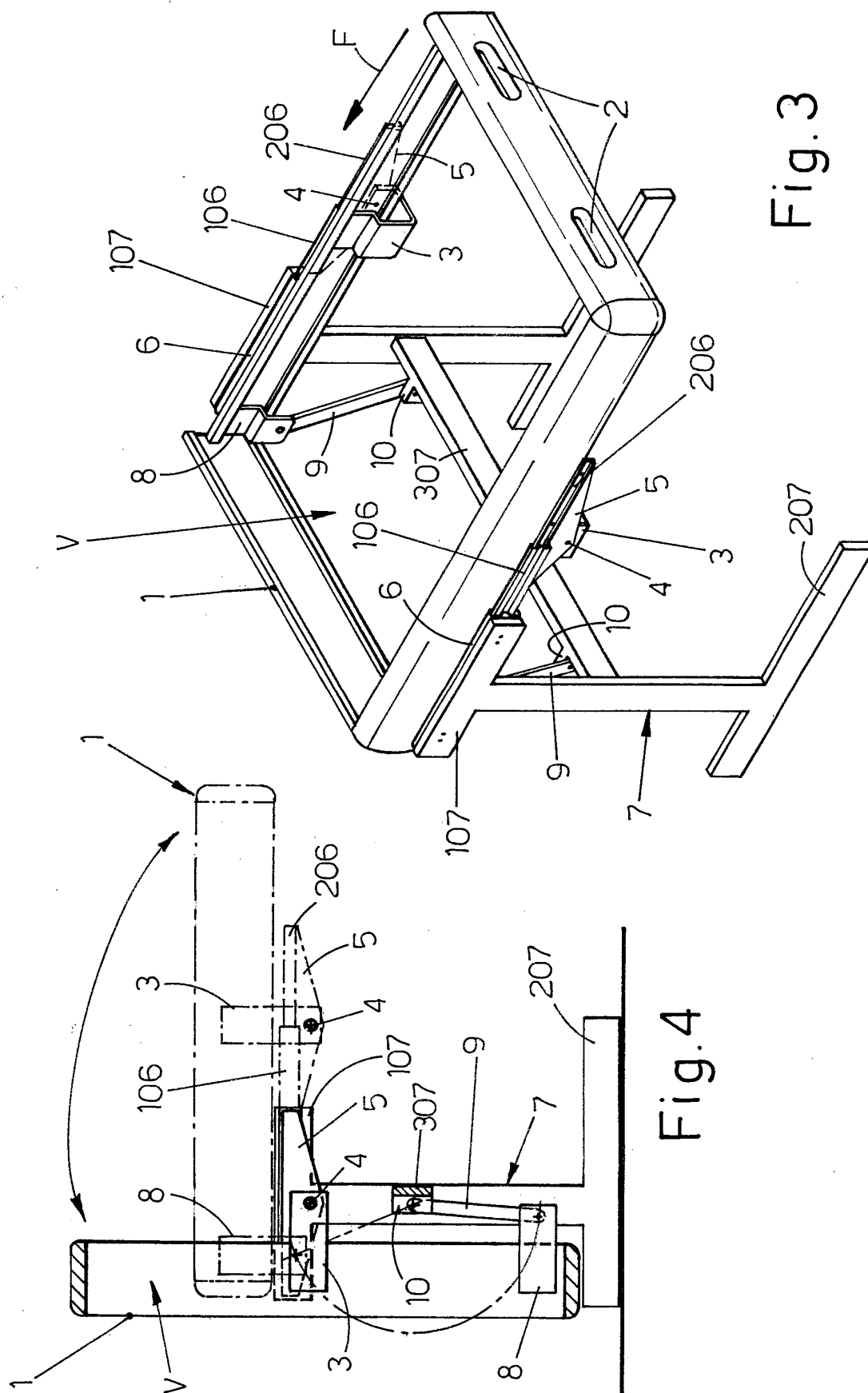


Fig.3

Fig.4

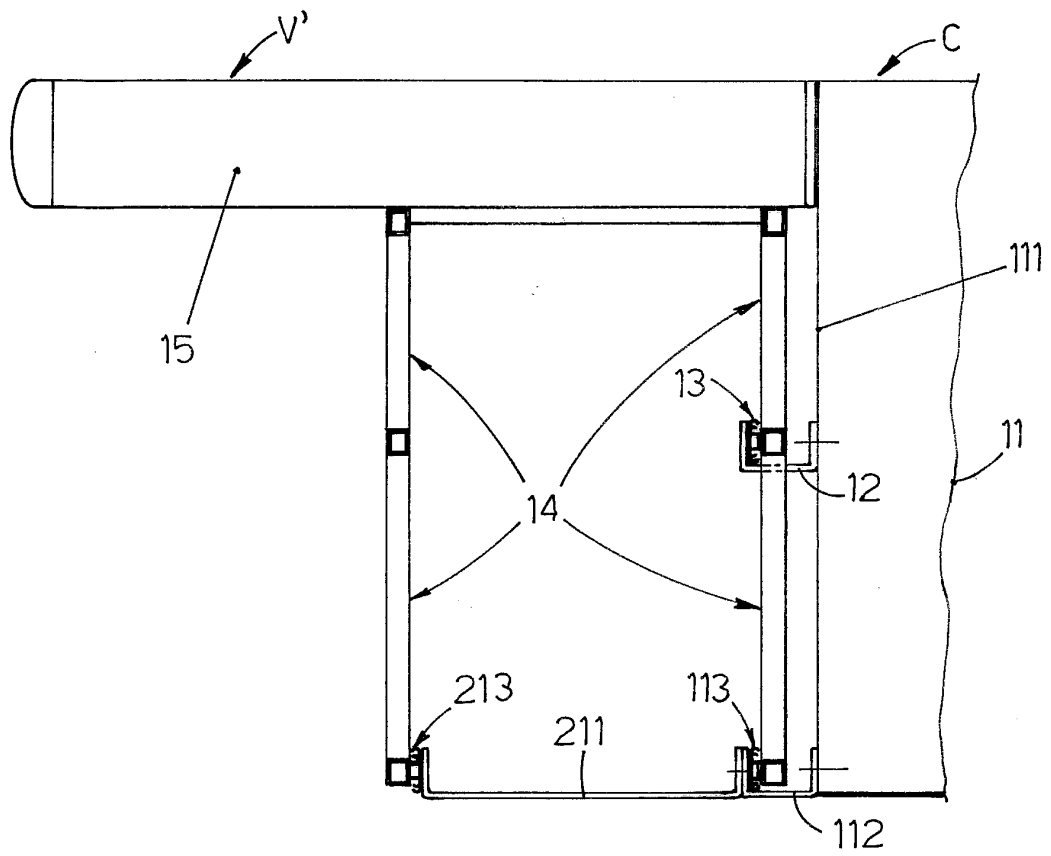


Fig.5

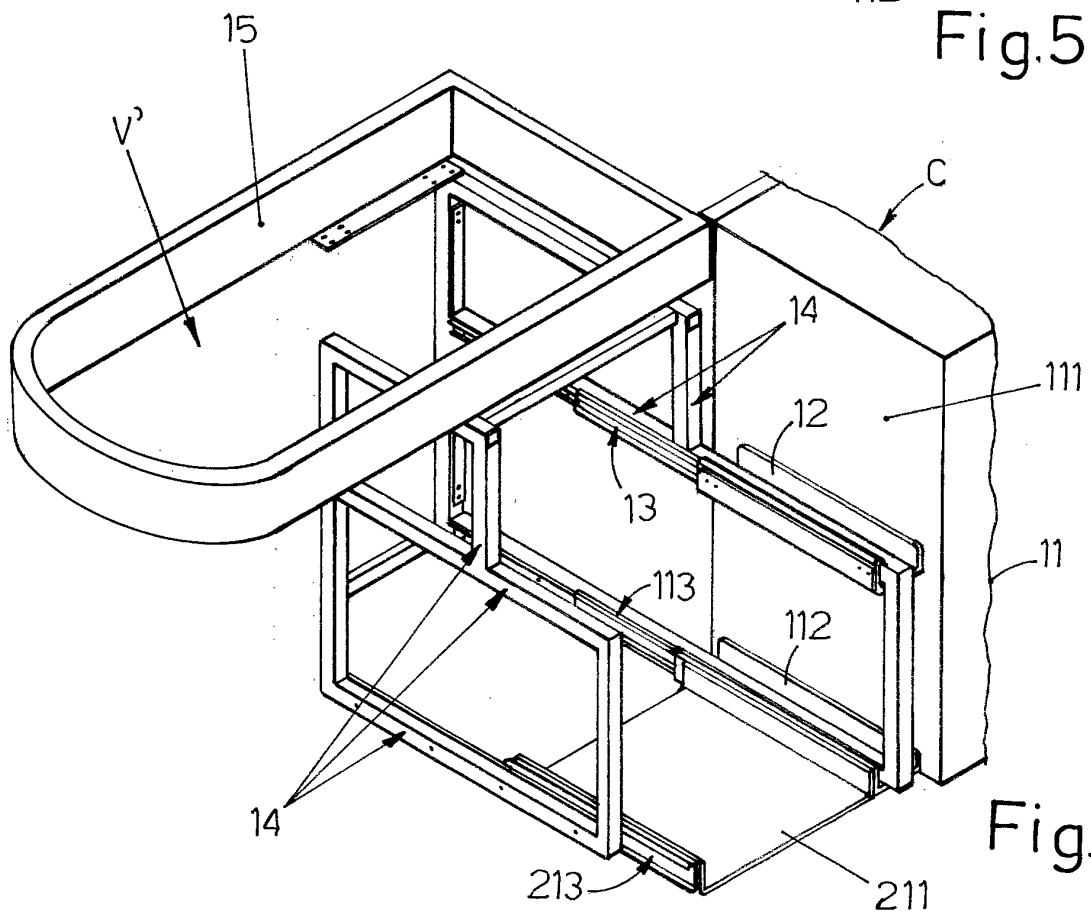


Fig.6

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1098275 A2 [0003]
- US 3990540 A [0003]