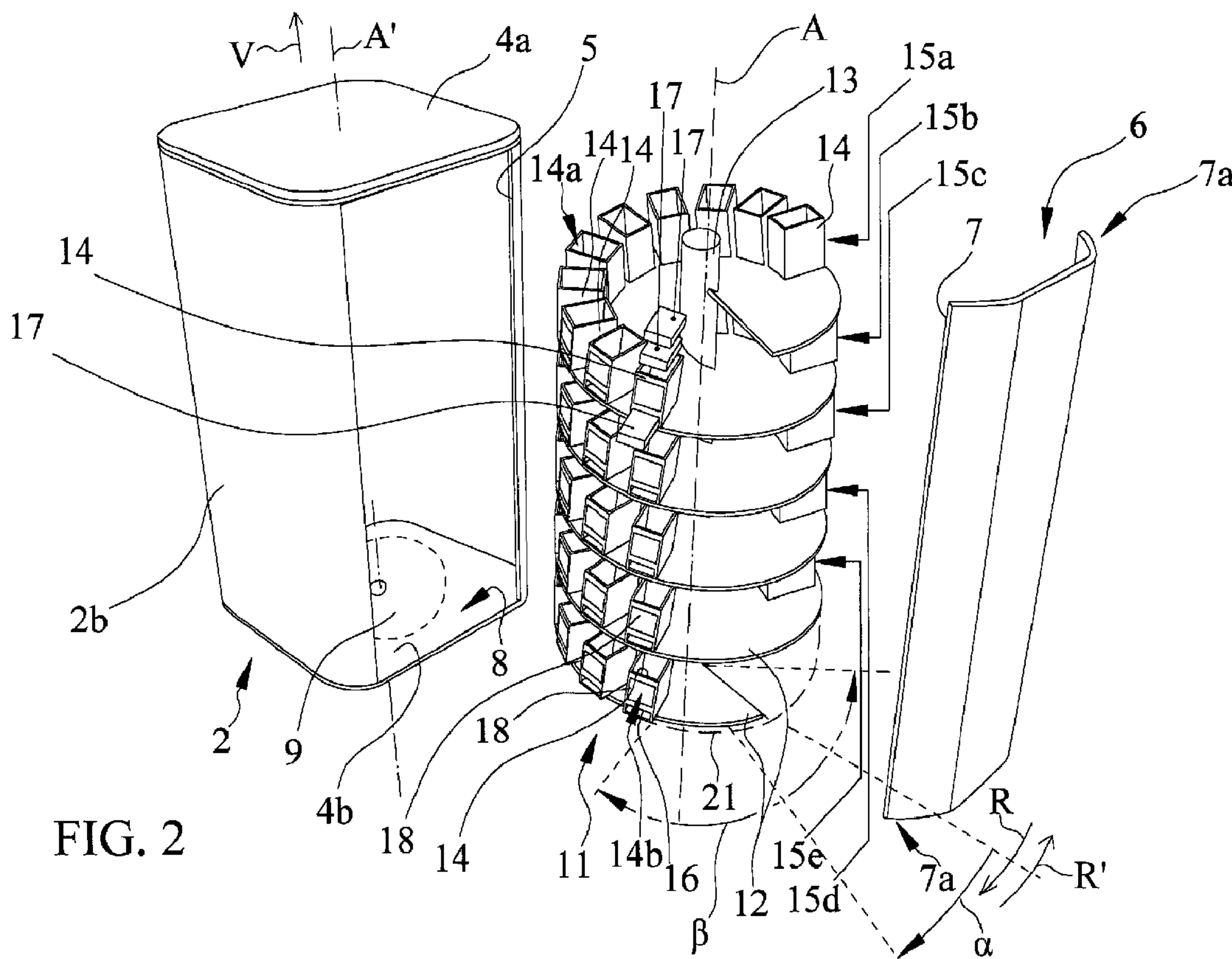




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 (54) Title: APPARATUS FOR KEEPING PACKAGES CONTAINING SMOKING ARTICLES



(57) **Abrégé/Abstract:**

The invention relates to an apparatus for keeping packages containing smoking articles ready for sale and/or for temporarily displaying the packages to a customer. The apparatus according to the invention comprises a rack carrying a plurality of

(57) **Abrégé(suite)/Abstract(continued):**

receptacles each adapted to contain a predefined number of the packages in such a manner that the packages can be taken out from the respective receptacle one after the other. Further, the apparatus comprises a cabinet which is adapted to house the rack and which has an access aperture to access the rack, the receptacles and the packages therein. The rack is mounted within the cabinet so as to be rotatable about an axis of rotation at least in a first direction of rotation. The rack and the cabinet are arranged in such a manner that, in an initial angular position of the rack, none of the receptacles is accessible from an outside of the cabinet through the access aperture for taking out a package from any receptacle, an accessible subset of the receptacles being accessible only after rotation of the rack in the first direction of rotation to a delivery angular position or to one of several delivery angular positions. The accessible subset is dependent on the angular position of the rack with respect to the cabinet.

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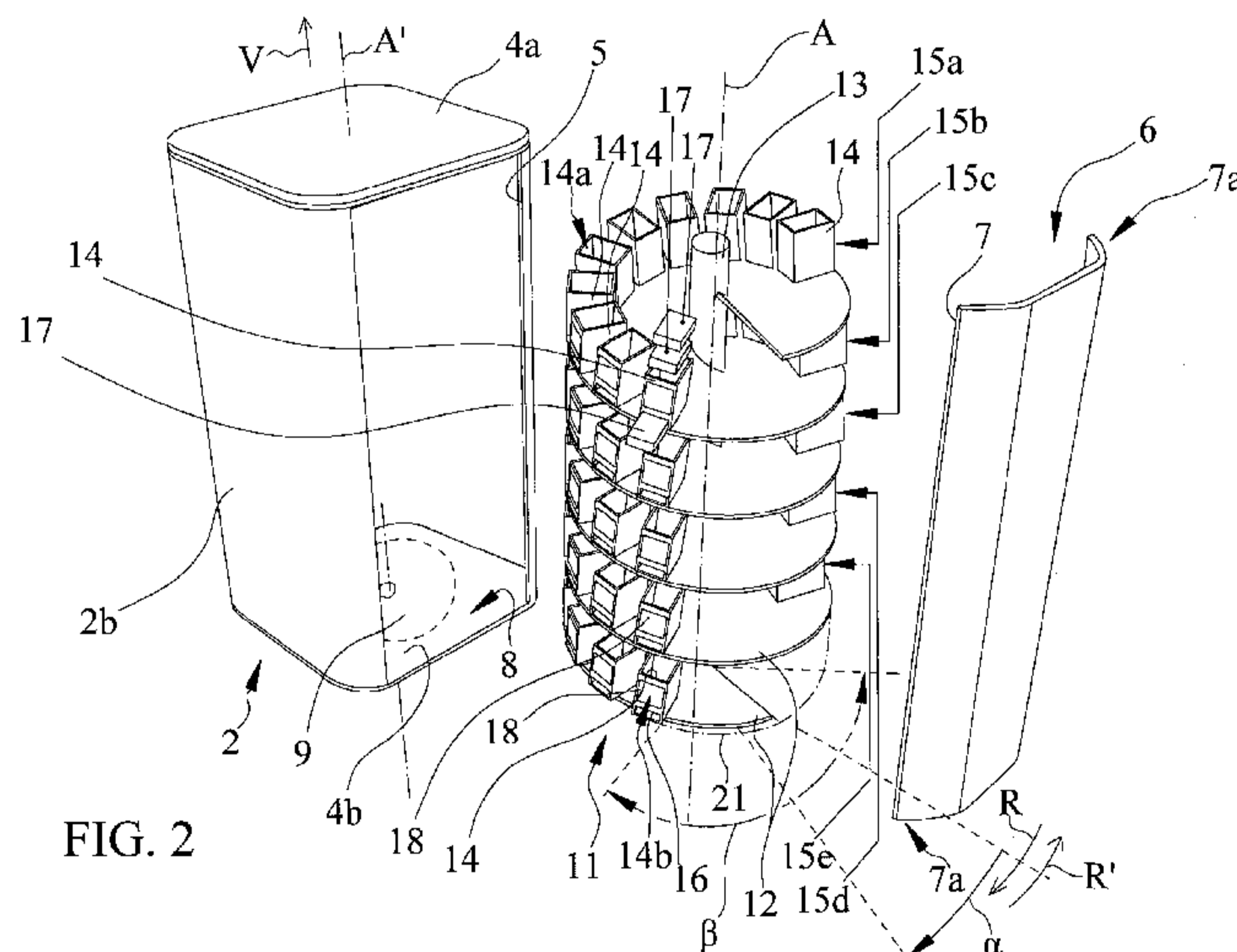
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(54) Title: APPARATUS FOR KEEPING PACKAGES CONTAINING SMOKING ARTICLES



(57) Abstract: The invention relates to an apparatus for keeping packages containing smoking articles ready for sale and/or for temporarily displaying the packages to a customer. The apparatus according to the invention comprises a rack carrying a plurality of receptacles each adapted to contain a predefined number of the packages in such a manner that the packages can be taken out from the respective receptacle one after the other. Further, the apparatus comprises a cabinet which is adapted to house the rack and which has an access aperture to access the rack, the receptacles and the packages therein. The rack is mounted within the cabinet so as to be rotatable about an axis of rotation at least in a first direction of rotation. The rack and the cabinet are arranged in such a manner that, in an initial angular position of the rack, none of the receptacles is accessible from an outside of the cabinet through the access aperture for taking out a package from any receptacle, an accessible subset of the receptacles being accessible only after rotation of the rack in the first direction of rotation to a delivery angular position or to one of several delivery angular positions. The accessible subset is dependent on the angular position of the rack with respect to the cabinet.

Apparatus for keeping packages containing smoking articles

FIELD OF THE INVENTION

The present invention relates to an apparatus useful for keeping packages that contain smoking articles ready for sale. The apparatus may further be used for temporarily displaying these packages to a customer.

TECHNICAL BACKGROUND

Smoking articles, such as cigarettes and the like, are commonly sold to the customer by the retailers in small packages, which may contain, for example, a number of approximately 20 cigarettes, and which can have the form of a box made of cardboard or of a pack made of soft paper.

A considerable number of different types of smoking articles, in particular many sorts of cigarettes, can today be found in the market. The types of smoking articles may differ, for example, in their flavor, the tobacco mixture used, the price, the brand and so on. As the types of smoking articles are many, and as the retailer will usually prefer to keep a certain number of individual packages of each type in readiness for sale, it has already in the past been found advantageous to provide some kind of shelf arrangement for presentation and sale of these packages, preferably in ordered manner according to the brand and flavor, for example, of the smoking articles contained in the packages.

Such a conventional display shelf is described in DE 94 17 898 U1 and comprises shelves fixed to vertical stands. These shelves are divided into compartments for packages containing the smoking articles, and are inclined so that, when a first package is taken out from a compartment, the packages remaining therein slide to the

front of the shelf under the action of a pushing roller acting on a rear end of a respective row of packages.

However, when packages containing smoking articles, like cigarettes, are kept ready for sale using a conventional arrangement of this type, the packages contained in the compartments are permanently visible to any client present in the shop where the smoking articles are sold. However, recent legislation may require the retailer to prevent packages of smoking articles, which the retailer keeps in the shop for selling them, from being seen by the customers present in the salesroom, except when a package is actually sold.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide an apparatus which, on the one hand, is suitable for keeping packages containing smoking articles ready for sale, and which may, if desired, also be used for temporarily displaying these packages to a customer who is desirous of purchasing one or more such packages, and which, on the other hand, is compliant with display ban regulations of the afore-mentioned type. The apparatus preferably should be suitable for keeping a significant number of different types of packaged smoking articles ready for sale. Further preferably, the apparatus should only require a limited amount of space in the shop.

The problem described above is solved, according to the invention, by an apparatus having the features of claim 1.

Accordingly, an apparatus for keeping packages containing smoking articles ready for sale and/or for temporarily displaying the packages to a customer is provided, which comprises:

- a rack carrying a plurality of receptacles, each receptacle being adapted to contain a predefined number of the packages in such a manner that the packages can be taken out from the respective receptacle one after the other;

- a cabinet being adapted to house the rack, the cabinet being provided with an access aperture to access the rack, the receptacles and the packages therein.

According to the invention, the rack is mounted within the cabinet in such a manner that the rack is rotatable about an axis of rotation at least in a first direction of rotation. Further, the rack and the cabinet are arranged in such a manner that, in an initial angular position of the rack none of the receptacles is accessible from an outside of the cabinet through the access aperture for taking out a package from any receptacle, and that an accessible subset of the receptacles is accessible only after rotation of the rack in the first direction of rotation to a delivery angular position or to one of several delivery angular positions of the rack. The accessible subset is dependent on the angular position of the rack with respect to the cabinet.

The idea underlying the present invention is that, by arranging the rack rotatably inside of a cabinet, and by accommodating the individual packages containing the smoking articles in a number of receptacles, preferably sorted by type of smoking article, a significant number of packages of various types of smoking articles can be easily held ready for sale, and the receptacle containing packages of the type of smoking articles the consumer desires can be easily selected by rotating the rack. The inventive apparatus, due to the rotatable arrangement of the rack inside the cabinet, thus has a limited footprint and also a limited front area, and a comparatively narrow access aperture will be sufficient for accessing a considerable number of different types of smoking articles. After a package has been sold to a client, the rack can be rotated back to its initial angular position, so that the packages and corresponding labeling which may be present on the receptacles cannot be seen from the outside of the cabinet. In this way, the apparatus of the present invention also complies with the display ban regulations discussed above.

Advantageous developments and improvements of the apparatus of the invention are contained in the dependent claims as well as in the detailed description, which refers to the figures of the drawings.

According to an advantageous improvement of the apparatus according to the invention, the axis of rotation of the rack is oriented along a vertical direction of the cabinet. By vertical direction, in the present context, the direction with respect to the cabinet is meant which is oriented vertically when the cabinet has been set up and has been positioned for use by the retailer. Rotating the rack about an axis oriented along the vertical direction has the advantage that the receptacles carried by the rack will not be turned upside down during rotation of the rack, and that therefore, means for preventing the packages containing the smoking articles from falling out of the receptacles are not needed.

According to a further preferred development of the apparatus of the invention, the rack comprises a helical surface on which the receptacles are disposed. Preferably, the helical surface has a small lead angle of, in particular, less than 20 degrees, and more preferably of less than 10 degrees. Such a rack provides a unique appearance, which is significantly different from the conventional shelf arrangements for smoking articles and which arouses a client's interest while the client purchases a package of smoking articles, which the retailer or shop assistant takes out from a receptacle carried by the rack. Moreover, disposing the receptacles on a helical surface, as proposed according to the present development, can be useful for aiding the retailer or shop assistant when he/she needs to quickly identify a receptacle containing a specific type of smoking article, as the vertical position of the accessible subset of receptacles varies when the rack is turned.

According to another preferred development of the apparatus according to the invention, the receptacles are arranged along portions of an imaginary cylindrical enveloping surface of the rack. In this manner, a large number of receptacles can be accommodated by

the rotatable rack, at a given size of the cabinet, and the receptacles are easily accessible due to their arrangement along an enveloping surface of the rack.

In accordance with another preferred development, each receptacle is provided with an opening which enables packages contained in the receptacle to be taken out therefrom. The receptacles are arranged on the rack with their openings facing outward from the axis of rotation. Preferably, the receptacles are arranged in such a manner that the openings enabling the packages to be taken out face radially outward from the axis of rotation. In this way, when the rack has been rotated into a delivery angular position, the retailer can easily take out a package from the receptacle of the desired type and sell it to the customer.

According to a further enhancement of the apparatus according to the invention, the receptacles are arranged on the rack in a plurality of levels. This makes it possible to accommodate an even greater number of receptacles and thus an even greater number of different types of smoking articles within the cabinet by means of the rack.

According to another improvement of the apparatus according to the invention, the receptacles are arranged on the rack in such a manner that a sector of the rack is left devoid of receptacles along the entire longitudinal extent of the rack. Preferably, the sector extends through an angle of between 60 degrees and 180 degrees when measured in a plane normal to the axis of rotation. In particular, the sector may be oriented towards the access aperture when the rack is in its initial angular position. By this improvement, it can be avoided in a simple manner that any receptacles or packages contained therein can be accessed or seen by the customer in the initial angular position.

According to an improvement, the apparatus further comprises an openable and closeable door adapted to cover the access aperture in a closed position of the door in order to essentially prevent the

rack from being seen from the outside of the cabinet. The door may be opened by the retailer when proceeding to a sale of one or more of the packages kept by means of the apparatus. After the sale, the door provided according to this improvement can be closed and allows, in its closed position, to prevent the receptacles, the packages and also labelling possibly present on the receptacles from being seen by customers present in the salesroom even better. Moreover, the door may be useful for further improving the aesthetic appearance of the apparatus when the door is closed.

According to a further development, the door is arranged so as to be pivotable from its closed position about an axis parallel to or coinciding with the axis of rotation of the rack in order to uncover the access aperture and enable access to the receptacles on the rack. According to this development, when the access aperture is fully uncovered, the door is essentially contained within the cabinet. When the door and the rack are arranged in this way, the movements of the door and the rack can be coupled to each other in a simple manner. Further, by this enhancement, the entire access aperture is easily accessible from the outside of the cabinet, and the shop assistant or the retailer is not hindered by an open or half-open door sticking out from the front face of the cabinet.

According to one particularly preferred development, the door is coupled to the rack so as to be rotated in common with the rack, the door covering the access aperture in the initial angular position of the rack. In this way, the door can simply be opened and closed along with the rotation of the rack.

According to a variant of the preceding development, the door, being rotatable in common with the rack, is coupled to the rack so as to substantially cover the circumference of the rack in the sector devoid of receptacles. In this way, the door can be coupled to the rack in a simple manner without hindering access to the receptacles for packages containing smoking articles.

According to a further enhancement, the door is coupled to the rack in such a manner that, in the closed position of the door, the door is enabled to be pushed radially inward towards the axis of rotation, preferably against a force generated by an elastic means, which couples the door and the rack, so as to enable the access aperture to be subsequently uncovered by rotating the rack from the initial angular position in the first direction of rotation. Preferably, rotation of the rack is prevented by appropriate locking means when the rack is in its initial angular position and the door is not pushed inward. The locking means may be operated to enable rotation of the rack by pushing the door inward, as described. Unintentional rotation of the rack and unintentional uncovering of the access aperture is thereby prevented.

In another development, the door is rotatably mounted to the cabinet, and a pivoting motion of the door is coupled to the rotation of the rack about the axis of rotation by means of a transmission, in particular by means of a gear mechanism or a linkage. This can be useful if it is desired to dispose receptacles on the rack along the entire circumference of the rack.

In a development of the apparatus, the rack may be rotatable from a first angular position corresponding to one of the delivery angular positions about the axis of rotation in the first direction of rotation until the rack reaches a final angular position which corresponds to another of the delivery angular positions of the rack. Thereby, advantageously, different subsets of the entire plurality of receptacles carried by the rack become successively accessible from the outside through the access aperture when the rack is rotated.

According to a further improvement of the apparatus of the invention, the door and the rack are arranged and coupled in such a manner that, when the door is opened, the rack assumes a first angular position immediately after the access aperture is fully uncovered. The rack is rotatable from the first angular position

about the axis of rotation in the first direction of rotation until it reaches a final angular position, in which the access aperture is still fully uncovered. The first angular position and the final angular position of the rack each correspond to a respective one of the delivery angular positions of the rack. In this way, different subsets of the entire plurality of receptacles carried by the rack become successively accessible from the outside through the access aperture of the cabinet after the door has been opened. Taking out packages from receptacles accessible when the rack has reached its final angular position is as simple as taking out packages from receptacles that are accessible when the rack assumes its first angular position.

According to a preferred improvement, the apparatus further comprises a biasing means, which may preferably be embodied as a spring means, and which is arranged so as to enable the rack to be rotated against a force or torque generated by the biasing means in the first direction of rotation by an operator. In a preferred variant, this operation can be performed by the operator by hand. The biasing means is adapted to induce a rotation of the rack in a second direction of rotation opposite to the first direction of rotation when the rack is released after having been rotated by the operator. By this enhancement, when the operator (e.g. the retailer or the shop assistant) releases the rack, for example by taking her/his hands off the rack after having rotated the same, the rack is always returned to a defined previous angular position. This may, for example, be advantageous when packages of smoking articles are to be sold to different clients, one immediately after the other. Due to the action of the biasing means, the shop assistant or retailer can be sure that the rack has been rotated back under the action of the torque or force created by the biasing means after the last sale.

According to a preferred and advantageous improvement, the biasing means is adapted to return the rack to the initial angular position when the rack is released after having been rotated to the delivery

angular position or to one of the delivery angular positions. By this improvement, operation of the apparatus is simplified even further. After a sale of a package, the rack can automatically be brought into a state in which the receptacles and the packages contained therein are not accessible through the access aperture, even in case the shop assistant or retailer forgets to rotate the rack back into its initial angular position.

In an advantageous improvement, in case the apparatus comprises also a door, the door is automatically closed when the rack is returned to the initial angular position under the action of the biasing means. This has the advantage that, in case the rack is released after having been rotated to the delivery angular position or to one of the delivery angular positions, even when the shop assistant or retailer forgets to close the door again, this will be accomplished automatically. In this way, it is made sure that the door is closed after each sale, without any action of the shop assistant or retailer, and that the packages containing smoking articles are kept ready for sale in compliance with the legislation.

According to another advantageous improvement, the biasing means is adapted to return the rack to the first angular position when the rack is released after having been rotated to the final angular position or to any angular position between the first angular position and the final angular position. This is particularly advantageous, as the shop assistant or retailer can always be sure to start from the first angular position when searching the rack for a particular receptacle. In addition, it is conceivable to fill the receptacles of the subset that is accessible when the rack is in its first angular position with packages containing smoking articles of those types that should be visible to the particular client, on the occasion of the purchase of a package, as long as possible.

In order to indicate the type of packages contained in a given receptacle, according to a preferred development, each receptacle may, on its front face oriented outward and away from the axis of

rotation, be provided with a suitable label or signboard. This is particularly advantageous in case the receptacles enclose the packages contained almost entirely and are made of intransparent material. Alternatively or additionally, the receptacles could be made of a transparent material so that the packages can be at least partially seen by the customer when the retailer proceeds to a sale and the door is in an opened position so that the access aperture is uncovered.

The receptacles and the rack may be, according to one development, be formed in one piece. Alternatively, the receptacles may be formed such as to be removable from the rack. For example, the receptacles and/or the rack may be provided with means enabling the receptacles to be releasably fastened to the rack. In a further alternative development, different sections or stories of the rack, which are preferably identical, may be formed in one piece with receptacles arranged on that section or story of the rack. A construction in one piece, either of the entire rack and the receptacles or of each of a number of different sections or stories of the rack, which afterwards make up the complete rack when assembled to each other, can be advantageous from the point of view of manufacturing the apparatus. In particular, manufacture may, as an example, be simplified by producing the receptacles and the rack from a suitable plastic synthetic material, for example by injection molding of thermoplastic synthetic material. Releasably fastened receptacles may have advantages when the receptacles need to be refilled with packages containing smoking articles.

All receptacles carried by the rack may be identical, except that they will usually - if a label or signboard is provided - be labelled differently in order to indicate different types of smoking articles. According to a further development, however, different receptacle types may be provided, in particular different receptacles adapted to various package sizes and/or package shapes.

The cabinet of the apparatus may be made from a metal material, for example from sheet steel or aluminum. More preferably, however, the cabinet comprises walls made from a synthetic material, in particular from acrylic glass or PMMA (polymethylmethacrylate), which is painted or coated so as to render it opaque. In the same manner, painted or coated acrylic glass or PMMA can also be used for forming the door.

According to a preferred development, the cabinet is block-shaped or cuboid-shaped, and preferably has rounded vertical edges. A cabinet of this type makes it possible to easily arrange several apparatuses according to the invention next to each other in case the capacity of a single apparatus - in spite of its ability to accommodate a considerable number of different types of smoking articles - is not sufficient for the needs of a particular retailer, for example. An arrangement for keeping packages containing smoking articles ready for sale and/or for temporarily displaying the packages to a customer can thereby be built up in a modular way.

The developments, improvements and enhancements described above may be arbitrarily combined with each other whenever this makes sense. Other possible developments, enhancements and implementations of the invention comprise combinations of features of the invention that have been described above or will be described in the following in relation to the detailed description of embodiments, even where such a combination has not been expressly mentioned.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be explained in the following with reference to the schematic figures of the drawings, illustrating embodiments of the invention.

Figure 1 is a perspective view of an apparatus according to an embodiment of the present invention, showing a cabinet and a door of the apparatus, the door being closed;

Figure 2 is an exploded perspective view of the apparatus according to the embodiment of Figure 1, additionally showing a rack carrying a plurality of receptacles; and

Figure 3 is a front view of four apparatuses, each being formed according to the embodiment of Figure 1, arranged next to each other, the doors of three of the apparatuses being open, and the racks of the apparatuses of which the doors are open being shown in three different angular positions.

The enclosed drawings are intended to illustrate embodiments of the invention so that the invention may be further understood. The drawings, in conjunction with the description, serve to explain principles and concepts of the invention. Other embodiments and many of the advantages described may be inferred from the drawings. Elements of the drawings are not necessarily drawn to scale.

Elements, features and components which are identical or which have the same function or effect have been labelled in the drawings using the same reference signs, except where explicitly stated otherwise.

DETAILED DESCRIPTION OF EMBODIMENTS

In Figure 1, an apparatus 1 for keeping packages containing smoking articles ready for sale and/or for temporarily displaying the packages to a customer is shown in perspective view. The apparatus 1 comprises a cabinet 2 having vertical side walls 2a and 2b as well as a vertical rear wall 2c. The cabinet 2 is generally cuboid-shaped but has rounded vertical edges 3. A vertical direction of the cabinet 2 is indicated by reference sign V. At the top and at the bottom, the cabinet 2 is closed by an essentially flat top wall 4a and an essentially flat bottom wall 4b, the top and bottom walls 4a, 4b being substantially parallel to each other.

The cabinet 2 is provided with an access aperture 5, of a substantially rectangular shape, extending along the front side F of the cabinet 2 from the bottom wall 4b to the top wall 4a.

In Figure 1, the access aperture 5 is covered by an openable and closeable door 6, which is shown in Figure 1 in its closed position. Longitudinal side edges 7 of the door 6, extending along the vertical direction V, are bent backward towards an inside of the cabinet 2 in regions 7a.

In Figure 2, the apparatus 1 of Figure 1 is shown again, now in exploded view. As displayed in Figure 2, the apparatus 1 further comprises a rack 11 comprising a helical surface 12 winding around a central axle 13, to which the helical surface 12 is fixedly connected. The rack 11 carries a plurality of receptacles 14, only some of which are provided with reference signs in Figure 2 for the sake of clarity. The receptacles 14 are disposed on the helical surface 12 of the rack 11 in such a manner as to be seated on top of the helical surface 12.

As can also be seen in Figure 2, the helical surface 12 is formed such as to perform a number of windings around the central axle 13. The lead angle of the helical surface 12 is preferably rather small, and does not exceed, in particular, 20 degrees, and preferably is equal to or less than about 10 degrees.

According to the example shown in Fig. 2, the receptacles 14 are arranged on the helical surface 12 in five levels 15a-15e, ten receptacles 14 being arranged on each of the levels 15a-15e along portions of an imaginary cylindrical envelope surface of the rack 11. Preferably, the receptacles 14 are, within each of the levels 15a-15e, arranged in evenly spaced manner, but preferably close to each other in order to accommodate a large number of receptacles 14 on the rack 11.

Each receptacle 14, as shown in Figure 2, is provided with an opening 16 which is formed so as to enable packages 17 containing smoking articles to be taken out from the respective receptacle 14. The receptacles 14 are arranged on the helical surface 12 of the rack 11 with the openings 16 facing radially outward from the central axle 13, and thus also radially outward from an axis of rotation A defined by the central axle 13.

In the embodiment depicted in Figure 2, the receptacles 14 are preferably each formed box-like but are each open at their tops 14a. The cross-section of the receptacles 14 is chosen in such a manner that a pile of packages 17 can be received within each of the receptacles 14. The receptacles 14 can be filled by inserting packages 17 through the open top 14a of the receptacles 14. The opening 16, intended for taking out packages 17 successively from each of the receptacles 14, is arranged at a lower end of a front face 14b of the receptacle 14, the front face 14b facing radially outward from the axis of rotation A and the central axle 13. The opening 16 is dimensioned to allow a single package 17, in particular the lowermost package 17 of the pile inside the receptacle 14, to be taken out from the receptacle 14 through the opening 16. The remaining packages 17 within the receptacle 14 move downward under the action of gravity as soon as a package 17 has been removed through the opening 16.

As is also shown in Figure 2, the cabinet 2 is adapted to accommodate the rack 11 inside the cabinet 2. The rack 11 is mounted within the cabinet 2 in such a manner that the axis of rotation A, defined by the central axle 13, is oriented along the vertical direction V of the cabinet 2, as indicated by reference sign A' in Figure 2. In use of the apparatus 1, i.e. when the apparatus 1 is set up for keeping packages 17 ready for sale, for example in a shop, the vertical direction V of the cabinet 2 extends substantially perpendicularly to the ground. As is not shown in Figure 2 in detail, the rack 11 is mounted within the cabinet 2 in

such a way that the rack 11 can rotated about the axis of rotation A.

In Figure 2, the door 6 is also shown. The door 6 serves to essentially prevent the rack 11, the receptacles 14 and the packages 17 contained within the receptacles 14 from being seen from an outside of the cabinet 2, in order to comply with legislation requiring that smoking articles must be hidden from the view of the customers except when the retailer proceeds to a sale.

Further, in Figure 2, it is shown that the receptacles 14 are arranged on the rack 11 in such a manner that a sector 21, indicated in the figure by a dash-dotted line, is devoid of receptacles 14 along the entire longitudinal extent of the rack 11. The sector 21 may extend through an angle β , when measured in a plane normal to the axis of rotation A, of between 60 degrees and 180 degrees, for example through an angle β substantially equal to 90 degrees.

On the front face 14b of each of the receptacles 14, a label or signboard 18 indicating the kind of packages that are contained in the respective receptacle 14 is fixed in suitable manner. For example, labels 18 may be adhesively bonded to the front face 14b of each of the receptacles 14.

Referring now to Figure 3, the mode of operation of the apparatus 1 including the operation of the door 6 and the rack 11 will be explained. As shown in Figure 3, the rack 11, the cabinet 2 and the door 6 of the apparatus 1 are dimensioned and arranged in such a manner that when the door 6 of the apparatus 1 is open, a subset of the receptacles 14 is accessible through the access aperture 5 from the outside of the cabinet 2. The subset that is accessible depends on the angular position α (see Figure 2) of the rack 11 about the axis of rotation A with respect to the cabinet 2, i.e. different receptacles 14 become accessible through the access aperture 5 when the rack 11 is turned inside the cabinet 2 about its axis of rotation A. This means that the rack 11 can assume several delivery

angular positions, in each of which a different subset of receptacles 14 can be accessed through the access aperture 5.

Figure 3 shows four apparatuses 1 according to the embodiment of Figure 1 and Figure 2, arranged in exemplary manner next to each other and denoted by reference signs 1a-d. The door 6 of the leftmost apparatus 1a in Figure 3 is closed, so that the rack 11 inside, carrying the receptacles 14 and the packages 17 therein, is substantially hidden from view and access to the rack 11, the receptacles 14 and the packages 17 is prevented. The door 6 is arranged in such a manner that it can be pivoted from its closed position, shown for apparatus 1a, about an axis parallel to or coinciding with the axis of rotation A of the rack 11 in order to uncover the access aperture 5.

As shown for apparatus 1b in Figure 3, when the door is open, access to the receptacles 14 on the rack 11 is possible. The access aperture 5 is fully open in the states of operation of apparatuses 1b, 1c and 1d in this figure, and in these states of operation, the respective door 6 is contained within the cabinet 2. In Figure 3, the rack 11 of each of the apparatuses 1b, 1c and 1d assumes a different delivery angular position with respect to the cabinet 2.

In the embodiment described with reference to Figures 1-3, the door 6 is coupled to the rack 11 so as to be rotated in common with the rack 11. In the state of apparatus 1a in Figure 3, the door 6 covers the access aperture 5 while the rack 11 assumes an initial angular position with respect to the cabinet 2.

The door 6 is coupled to the rack 11 and dimensioned in such a manner that it substantially covers the circumference of the rack 11, along the entire length thereof, in the region of the sector 21 which is devoid of receptacles 14, as shown in more detail in Figure 2.

In a preferred variant of this embodiment, the door 6 is coupled to the rack 11 by means of a suitable mechanism in such a manner that the door 6 can be, when in its closed position, as shown in Figure 3 for apparatus 1a, be pushed radially inward towards the central axle 13. This is indicated by arrow P. There may be an elastic means, not shown in the Figures, coupling the door 6 and the rack 11 and, for example, arranged between the door 6 and the rack 11, which generates a force against which door 6 can be pushed inward by hand along arrow P.

The door 6 and the rack 11 are rotated in common - after the door 6 has been pushed inward, as the case may be - as indicated by reference sign R in Figure 3, about the axis of rotation A defined by the central axle 13, in a first direction of rotation from the initial angular position of the rack 11 shown for apparatus 1a to a first angular position of the rack 11, shown for apparatus 1b in Figure 3. The rack 11 thus assumes the first angular position shown immediately after the access aperture 5 has become fully uncovered. In the state of operation of apparatus 1b, a given subset of receptacles 14 is accessible through the access aperture 5. Preferably, the receptacles 14 accessible in the state of apparatus 1b are filled with those types of packages 17 of smoking articles that the customer should see most and longest on the occasion of a sale of a package 17.

In a further, alternative variant of this embodiment, the apparatus 1, 1a-d may be provided without a door 6. In this case, in order to provide a function of preventing the packages 17 containing smoking articles and the labels or signboards 18 from being seen from the outside of the cabinet 2, the sector 21 which is devoid of receptacles is arranged so as to be oriented towards the access aperture 5 when the rack 11 assumes its initial angular position. In this case, it is preferred that the angle β is chosen sufficiently large, in such a manner that in the initial angular position of the rack 11, the front face 14b of none of the receptacles 14 on the rack 11 can be seen through the access aperture 5.

From the first angular position of the rack 11, shown for apparatus 1b and corresponding to a delivery angular position of the rack 11, the rack 11 can be rotated further within the cabinet 2 in the first direction of rotation R, to assume a second, intermediate angular position corresponding to another delivery angular position of the rack 11, as shown for apparatus 1c and, when rotated even further in the direction R, to assume a final angular position, as this is shown for apparatus 1d. The final angular position of the rack 11 corresponds to a further delivery angular position thereof.

When the rack 11 is in the first angular position, in the final angular position or in any intermediate angular position, a retailer or shop assistant can take out a package 17 containing smoking articles from a chosen receptacle 14 of the respective accessible subset of the receptacles 14.

The apparatus 1 comprises a biasing means, not shown in the figures, which may, for example, be formed as a spring means, and which is arranged preferably so as to couple the rack 11 and the cabinet 2 in such a manner that the rack 11 is enabled to be rotated against a force or a torque, which is generated by the biasing means, in the first direction of rotation R. The biasing means is formed in such a manner that this operation of rotation in direction R can be carried out by an operator, in particular by hand. When the retailer or shop assistant releases the rack 11 after having taken out a package 17, the biasing means induces a rotation of the rack 11 in a second direction of rotation R', opposite to the first direction of rotation R. The rack 11 thus automatically rotates back, in the case of the embodiment depicted in the figures, to the first angular position of the rack, shown for apparatus 1b, in which the rack 11 displays those receptacles 14 containing packages 17 of smoking articles that the customer should preferably see as long as possible on the occasion of a sale. The rotation R' is induced by the biasing means when the rack 11 is released by the operator in any angular

position of the rack 11 between the first and the final angular positions.

In an alternative and preferred embodiment, the biasing means may be adapted so as to return the rack 11 to the initial position of the rack 11, shown in Figure 3 for apparatus 1a, which means that when the operator releases the rack 11, the door 6 is automatically closed.

In a preferred variant, when the rack 11 returns to the initial angular position, the door 6 is moved radially outward from the central axle 13 under the action of the elastic means mentioned before, coupling the rack 11 and the door 6, thus covering the access aperture 5. In this state, rotation of the rack 11 is preferably prevented by a suitable locking mechanism unless the operator pushes the door 6 inward along direction P again.

In a further variant of the embodiment shown in Figures 1-3, the door 6 may be rotatably mounted to the cabinet 2 in a manner separate from the rack 11. In this case, a transmission, not shown in the figures, in particular a suitable gear mechanism or a suitable linkage, may be provided in order to couple a pivoting motion of the door 6 to the rotation of the rack 11 about the axis of rotation A.

As indicated by a dash-dotted line in Figure 1, in a preferred variant of the embodiment displayed in this figure, the bottom wall 4b of the cabinet 2 may be replaced by a box-like base 4b', being larger in height, compared to the bottom wall 4b. The box-like base 4b' can be useful for accommodating mechanical components, not shown in the figures in detail, for enabling the rotation of the rack 11 and the rotational or pivoting motion of the door 6, as well as for enabling the door 6 to be pushed inward along arrow P, as described above. The biasing means described above may also be accommodated inside the box-like base 4b'.

In particular, within the box-like base 4b', a rotatable plate 9 may be provided. This is indicated schematically by a dashed line in Figure 2. Preferably, such a rotatable plate 9 is circular in shape and substantially fills a corresponding circular recess provided in an internal floor 8 of the cabinet 2 so as to be flush with the internal floor 8, this internal floor 8 being formed by a top of the box-like base 4b'. By means of the rotatable plate 9, the above-described rotations in the first and second directions of rotation R, R' about the axis A (see Figure 3) can be accomplished. Specifically, the rack 11 can be arranged on the rotating plate 9, and the door 6 and the rack 11 can be coupled to each other by means of the rotatable plate 9 in such a manner that the operation of the apparatus 1, as set forth above with reference to the embodiments of Figures 1-3 and/or their variants, is achieved.

Top and bottom walls 4a, 4b as well as side walls 2a, 2b and rear wall 2c of the cabinet 2 - and also the box-like base 4b', if it is provided - may be formed from a metal material like steel or aluminum, but preferably are manufactured from acrylic glass or PMMA (polymethylmethacrylate), which is painted or coated so as to be opaque. Similarly, the door 6 may be manufactured using a metal material, such as a steel or aluminum sheet, but preferably is also formed with acrylic glass. The rack 11 may be formed in one piece with the receptacles 14 and the central axle 13. Alternatively, rack 11 may be formed by assembling a number of sections or stories, each of the sections or stories, for example, corresponding to one of the levels 15a-15e. Each section or story may then be produced in one piece with the associated receptacles 14. The rack 11 and the receptacles 14 may be formed from a thermoplastic synthetic material, for example by injection molding.

Alternatively, the receptacles 14 may be produced separately from the axle 13 and the helical surface 12 of the rack 11, and the receptacles 14 may be provided with suitable means, not shown, which allow to permanently or releasably fix the receptacles in predefined positions on the helical surface 12.

Although in the embodiment depicted in the figures, the receptacles 14 are all formed in identical manner and size, and differ only by the packages 17 contained and by the label or signboard 18 placed on the respective front face 14b, it is also conceivable to arrange receptacles 14 of varying size and/or shape, for example of varying width, on the helical surface 12, although the provision of identical receptacles 14 may be more preferable.

Although the invention has been completely described above with reference to preferred embodiments, the invention is not limited thereto but may be modified in various ways.

List of reference signs

1	apparatus
2	cabinet
2a	side wall (cabinet)
2b	side wall (cabinet)
2c	rear wall (cabinet)
3	rounded vertical edge (cabinet)
4a	top wall (cabinet)
4b	bottom wall (cabinet)
4b'	box-like base
5	access aperture (cabinet)
6	door
7	longitudinal side edge (door)
7a	region (door)
8	internal floor (cabinet)
9	rotatable plate
11	rack
12	helical surface (rack)
13	central axle (rack)
14	receptacle
14a	top (receptacle)
14b	front face (receptacle)
15a-15e	level (rack)
16	opening (receptacle)
17	package containing smoking articles
18	label or signboard
21	sector devoid of receptacles
F	front side
V	vertical direction
A	axis of rotation (rack)
A'	axis of rotation (when rack is arranged inside cabinet)
P	pushing direction
R	first direction of rotation
R'	second direction of rotation opposite to the first direction of rotation

CLAIMS

1. Apparatus (1) for keeping packages (17) containing smoking articles ready for sale and/or for temporarily displaying the packages (17) to a customer (11), the apparatus (1) comprising:
 - a rack (11) carrying a plurality of receptacles (14) each adapted to contain a predefined number of the packages (17) in such a manner that the packages (17) can be taken out from the respective receptacle (14) one after the other;
 - a cabinet (2) being adapted to house the rack (11) and having an access aperture (5) to access the rack (11), the receptacles (14) and the packages (17) therein;
 - the rack (11) being mounted within the cabinet (2) so as to be rotatable about an axis of rotation (A) at least in a first direction of rotation (R); and
 - the rack (11) and the cabinet (2) being arranged in such a manner that, in an initial angular position of the rack (11) none of the receptacles (14) is accessible from an outside of the cabinet (2) through the access aperture (5) for taking out a package (17) from any receptacle (14), an accessible subset of the receptacles (14) being accessible only after rotation of the rack (11) in the first direction of rotation (R) to a delivery angular position or to one of several delivery angular positions of the rack (11), the accessible subset being dependent on the angular position (α) of the rack with respect to the cabinet (2).
2. Apparatus according to claim 1,
 - characterized in that the axis of rotation (A) is oriented along a vertical direction (V) of the cabinet (2).
3. Apparatus according to claim 1 or 2,
 - characterized in that the rack (11) comprises a helical surface (12) on which the receptacles (14) are disposed.

4. Apparatus according to at least one of the preceding claims, characterized in that each receptacle (14) is provided with an opening (16) which enables packages (17) contained in the receptacle (14) to be taken out therefrom, the receptacles (14) being arranged on the rack (11) with their openings (16) facing outward, preferably radially outward, from the axis of rotation (A).
5. Apparatus according to at least one of the preceding claims, characterized in that the receptacles (14) are arranged on the rack (11) in a plurality of levels (15a-15e).
6. Apparatus according to at least one of the preceding claims, characterized in that the receptacles (14) are arranged on the rack (11) in such a manner that a sector (21) of the rack (11) is left devoid of receptacles (14) along the entire longitudinal extent of the rack (11), the sector (21) preferably extending through an angle (β) of between 60 degrees and 180 degrees when measured in a plane normal to the axis of rotation (A), and in particular in that the sector (21) is oriented towards the access aperture (5) when the rack (11) is in its initial angular position.
7. Apparatus according to at least one of the preceding claims, characterized in that the apparatus (1) further comprises an openable and closeable door (6) adapted to cover the access aperture (5) in a closed position of the door (6) in order to essentially prevent the rack (11) from being seen from the outside of the cabinet (2).
8. Apparatus according to claim 7, characterized in that the door (6) is arranged so as to be pivotable from its closed position about an axis parallel to or coinciding with the axis of rotation (A) of the rack (11) in order to uncover the access aperture (5) and enable access to the receptacles (14) on the rack (11), the door (6) being

essentially contained within the cabinet (2) when the access aperture (5) is fully uncovered.

9. Apparatus according to claim 7 or 8, characterized in that the door (6) is coupled to the rack (11) so as to be rotated in common with the rack (11), the door (6) covering the access aperture (5) in the initial angular position of the rack (11).
10. Apparatus according to claim 9, characterized in that the door (6) is coupled to the rack (11) in such a manner that, in the closed position of the door (6), the door (6) is enabled to be pushed radially inward towards the axis of rotation (A), preferably against a force generated by an elastic means coupling the door (6) and the rack (11), so as to enable the access aperture (5) to be subsequently uncovered by rotating the rack (11) from the initial angular position in the first direction of rotation (R).
11. Apparatus according to claim 7 or 8, characterized in that the door (6) is rotatably mounted to the cabinet (2) and in that a pivoting motion of the door (6) is coupled to the rotation of the rack (11) about the axis of rotation (A) by means of a transmission, in particular by means of a gear mechanism or a linkage.
12. Apparatus according to at least one of claims 7 to 11, characterized in that the door (6) and the rack (11) are arranged and coupled in such a manner that, when the door (6) is opened, the rack (11) assumes a first angular position immediately after the access aperture (5) is fully uncovered and in that the rack (11) is rotatable from the first angular position about the axis of rotation (A) in the first direction of rotation (R) until it reaches a final angular position, in which the access aperture (5) is still fully uncovered, the first angular position and the final angular position each

corresponding to a respective one of the delivery angular positions of the rack (11).

13. Apparatus according to claim 12,
characterized in that the apparatus (1) further comprises a biasing means, in particular a spring means, which is arranged so as to enable the rack (11) to be rotated against a force or torque generated by the biasing means in the first direction of rotation (R) by an operator, the biasing means being adapted to induce a rotation of the rack (11) in a second direction of rotation (R') opposite to the first direction of rotation (R) when the rack (11) is released after having been rotated.
14. Apparatus according to claim 13,
characterized in that the biasing means is adapted to return the rack (11) to the initial angular position when the rack (11) is released after having been rotated to the delivery angular position or one of the delivery angular positions,
or in that the biasing means is adapted to return the rack (11) to the first angular position when the rack (11) is released after having been rotated to the final angular position or to any angular position between the first angular position and the final angular position.
15. Apparatus according to at least one of claims 1 to 11,
characterized in that the apparatus (1) further comprises a biasing means, in particular a spring means, which is arranged so as to enable the rack (11) to be rotated against a force or torque generated by the biasing means in the first direction of rotation (R) by an operator, the biasing means being adapted to induce a rotation of the rack (11) in a second direction of rotation (R') opposite to the first direction of rotation (R) when the rack (11) is released after having been rotated.

16. Apparatus according to claim 15, characterized in that the biasing means is adapted to return the rack (11) to the initial angular position when the rack (11) is released after having been rotated to the delivery angular position or to one of the delivery angular positions, or in that the rack (11) is rotatable from a first angular position corresponding to one of the delivery angular positions about the axis of rotation (A) in the first direction of rotation (R) until it reaches a final angular position corresponding to another of the delivery angular positions, wherein the biasing means is adapted to return the rack (11) to the first angular position when the rack (11) is released after having been rotated to the final angular position or to any angular position between the first angular position and the final angular position.

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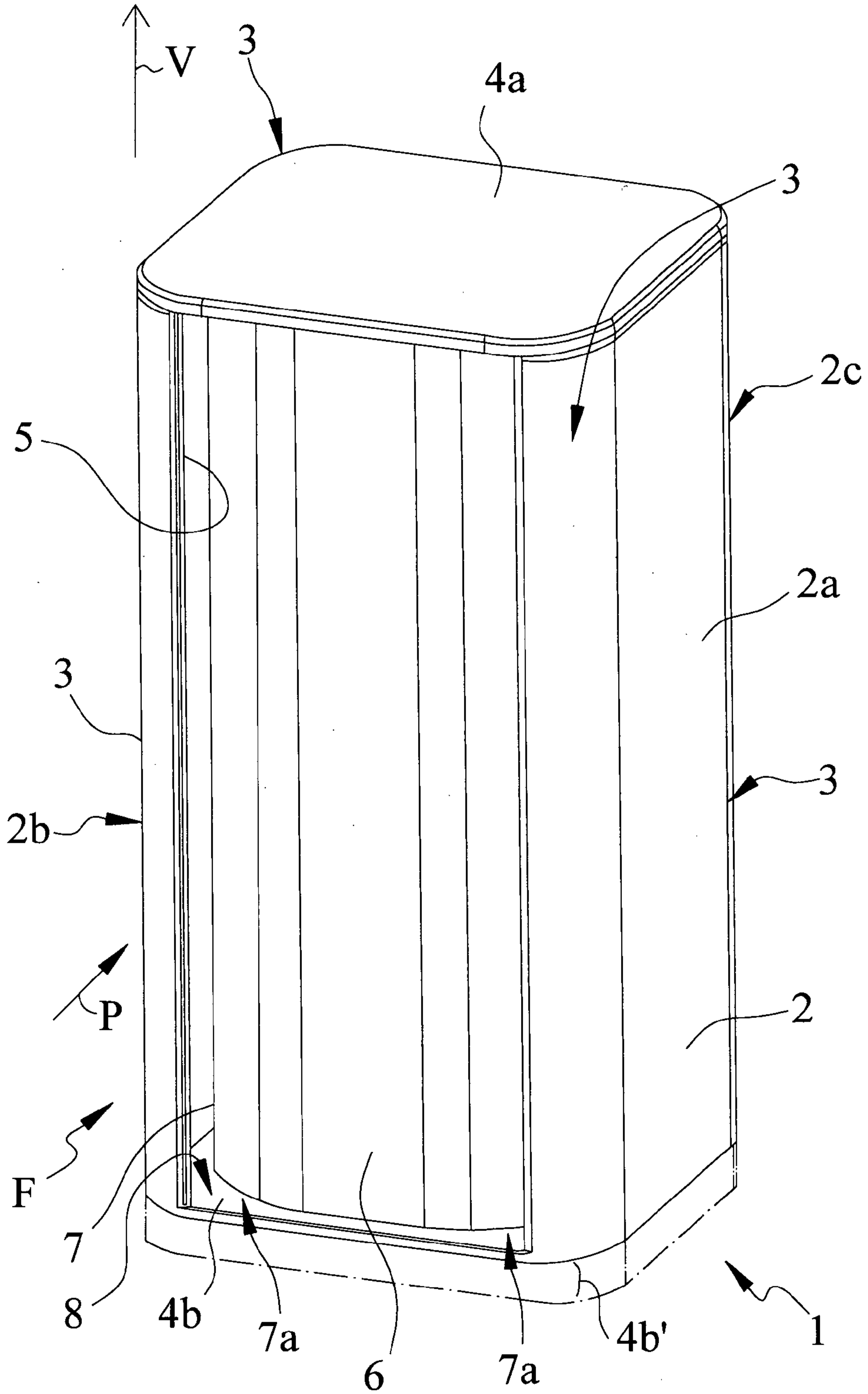


FIG.1

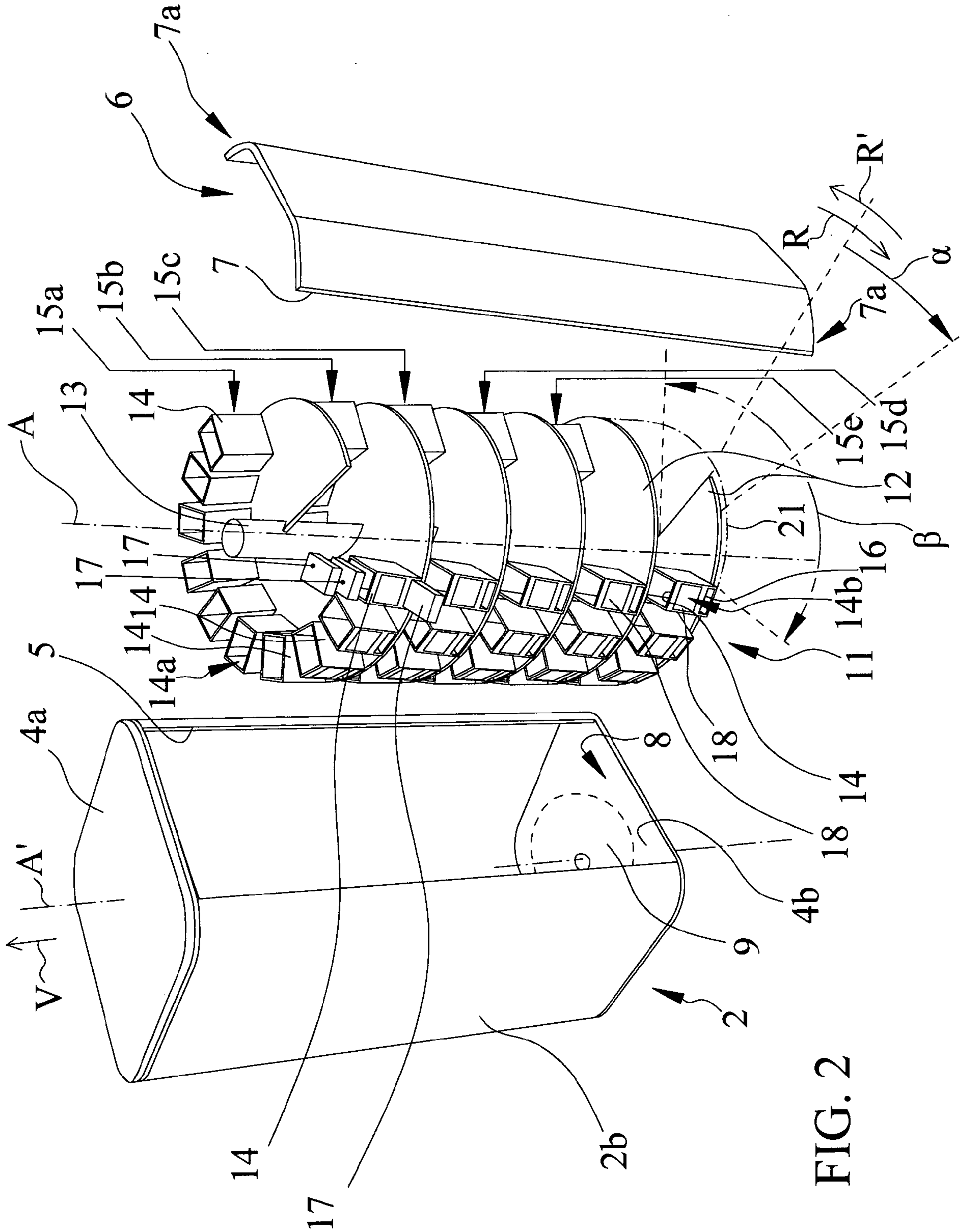


FIG. 2

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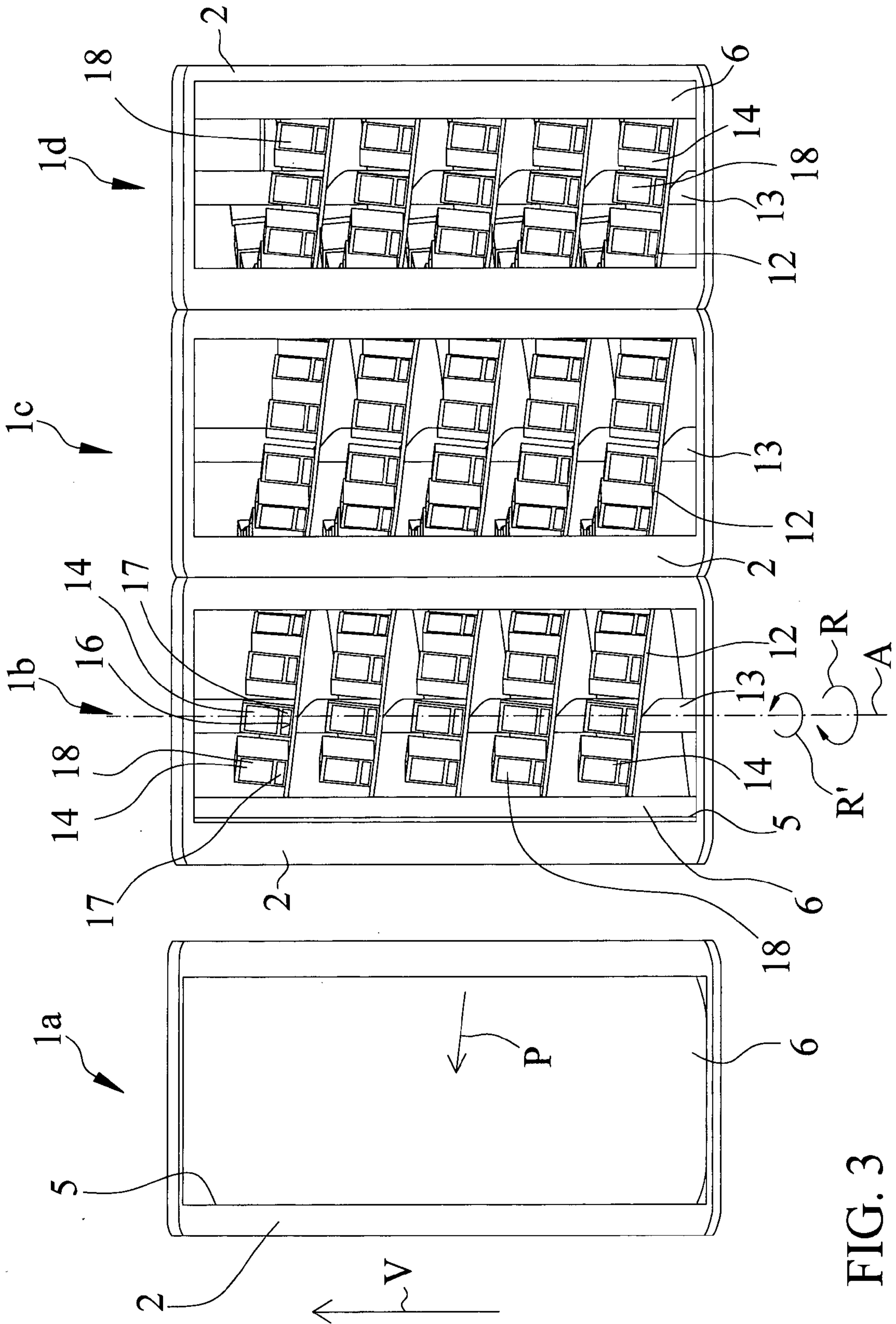


FIG. 3

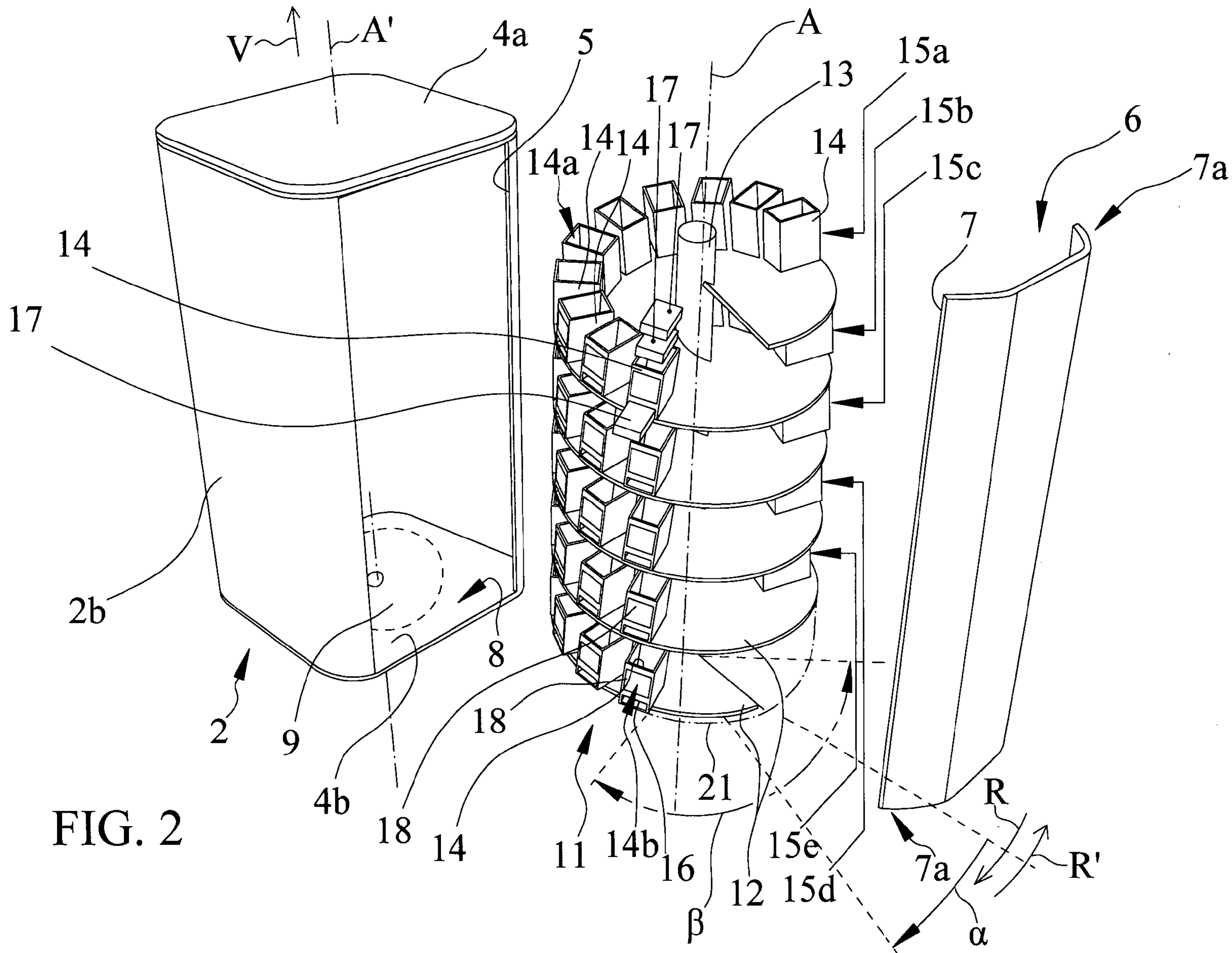


FIG. 2