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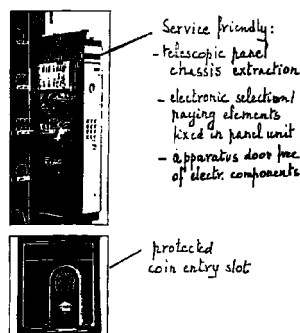
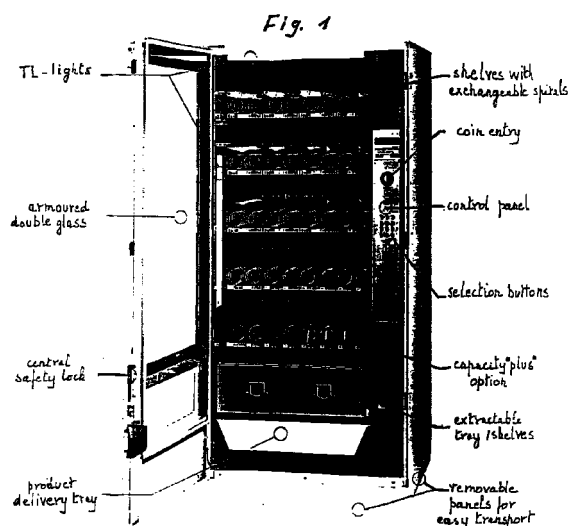
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(54) **Apparatus for dispensing parts**

(57) The invention concerns an apparatus for dispensing objects of relatively small size, wherein said apparatus comprises a room space where the objects are visibly disposed and displayed for customers, means for allowing a customer to select an object, means for collecting payment of a selected object, and means for making dispensably available a selected object from said room space to the customer, said apparatus being characterized by being adapted for dispensing bicycle and/or motorcycle parts and/or accessory parts.



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Description

[0001] Vending machines of the kind similar to the entitled apparatus are already in existence for many years, but not for dispensing bicycle and motorcycle parts.

[0002] The idea underlying the present invention has originated from the concern to offer the related customer an adequate service. In connection with bicycle rent in the Flemish Ardennes the inventor has noticed that the touring cyclists could not get any material help on sundays and official holidays, which eventually triggered the idea to set up vending machines along cycle touring routes, at shops, inns and even supermarkets, i.e. places of busy attendance.

[0003] As starting point for the present invention there has been chosen a common vending machine of sweets which is equipped with spiral coils. Said machine has been constructively adapted for receiving and dispensing the desired article available in bicycle and motorcycle commerce and industry.

[0004] The present invention is related to an apparatus for dispensing objects of relatively small dimension, which comprises a room space wherein the objects are arranged in a well-visible display way for the customer, means enabling the customer to select an object, means for cashing-in the payment of a selected object, and means for dispensing the selected object from said room space to the customer, characterized in that said apparatus is adapted for dispensing bicycle and/or motorcycle parts and/or accessory parts.

[0005] More in particular the invention provides an apparatus according to claim 1, characterized in that it comprises a vending machine of the kind having a plurality of superposed compartments provided each with a rotatable coil, which enables to carry the displayed objects from the compartments towards a receiving and dispensing room, whereby said dispensing is controlled by means of the apparatus for selecting and means of the apparatus for cashing-in payment.

[0006] The invention further is related to a method of dispensing bicycle and/or motorcycle parts and/or accessory parts, characterized in that said bicycle and/or motorcycle parts and/or accessories are disposed in vending machine which is to be actuated by customers, said parts and/or accessories being indicated in the vending machine on a selection-reference and price listing, wherein the vending machine controls and implements the following actions of the customer:

- selecting a part or accessory to be dispensed by the machine,
- introducing by one or more bank notes and/or coins the indicated purchase price for said part or accessory,

or vice versa.

[0007] The vending machine for bicycle parts com-

prises a metal casing including a plurality of superposed shelves or racks subdivided in different compartments in which a spiral coil is rotatably disposed.

The coils are generally made of stainless steel. The size of the coil depends on the width and depth of the desired article (part) which is moving within the coil spiral. The parts are conveniently packaged in transparent plastic (blister) or mounted on a strip (card board) with lashes and the like.

[0008] The parts may comprise i.a. CO₂- air cartridges, tire removers, rubber solution boxes, glue tubes, toe clips, "inbus" spanners, reflector tires, saddle covers, tire pumps, anti-puncture spray cans, antitheft locks, air chambers, rack binders, cables and accessories, tools, different oils, drink cans and bottle holders, a variety of brake shoes, spark plugs, a variety of other bicycle and motorcycle parts.

[0009] The dispensing system is actuatable by introducing wins of 1, 5, 20 or 50Bfr or similar coin values in other currency.

Thereafter a selection is to be made of the desired article, for instance code A2 for a tire air chamber.

After pushing the required buttons the vending machine is put in operation.

With the correct push button combination and price the dispensed article falls into a bin provided at a bottom part of the metal housing of the machine.

[0010] By means of a flap on the outside of the dispenser the article can be removed manually from within the bin.

The vending machines returns the change in case the product price is lower than the introduced amount of money) e.g. by means of a coin or note changer.

The article code and price may be indicated below the article display shelf with a label which is fastened to the shelves with a metal sheet.

[0011] The vending machine of the invention may further comprise a validator for electronic payment, which accepts e.g. a Proton card (Belgium), a ChipKnip card (Netherlands), or also a Eurocard with PIN and credit cards (Visa, Mastercard etc.).

[0012] The spiral coils for receiving and moving the bicycle small parts have a diameter, pitch, thread and coiling shape adapted to the dimensions and volumetric form of the (packaged) accessory parts.

The dispensing chutes or compartments wherein the rotatable coils are mounted may have different cross-sections in the superposed shelf layers and may also differ in section in a given shelf storey.

For a reliable delivery of the selected articles the compartments preferably comprise parallel bottom rails or guiding profiles on which the lower side of the packaged part is slidably guided. In order to prevent dispensing malfunction by friction or obstruction it is preferred to provide the article contacting surface of the guiding profiles with a preferably convex rounding, whereby moreover the profiles advantageously comprise a slantwise, asymmetric rounding-off of their side edges at the deliv-

ery end of their length so that the selected parts turn over easily and are troublefree dispensed.

Large parts are guided on preferably two guiding rails of cylindrical shape to improve their forward gliding. They are retained and moved by two coils rotating synchroni- 5 cally but in opposite sense, with the coils being driven by one electromotor.

The guiding rails also improve the stable operation of the spiral coils and prevent that coil windings tend to deform or obstruct/touch one another while rotating. 10

Figure 1 shows a preferred embodiment of the invention and is illustrative of construction details for main components of the apparatus.

Figure 2 illustrates a possible configuration of the compartments over a shelf or drawer layer and the whole vending apparatus. 15

Claims

- 20
1. Apparatus for dispensing articles of relatively small dimensions comprising:

a room space in which the articles are disposed and displayed in a visible way for customers, means for allowing a customer to select an article, means for collecting the payment of a selected article, and means for making said selected article dispensably available to the customer from said room space, 25 characterized in that said apparatus is adapted for dispensing bicycle and/or motorcycle parts and/or accessories. 30

2. Apparatus according to claim 1, characterized in that it comprises a vending apparatus of the kind containing a plurality of superposed compartments in which a rotatable spiral coil is provided thereby enabling to move the articles disposed in a compartment towards a receiving and dispensing room space of the apparatus, whereby said dispensing operation is controlled by the means for selecting and the means for payment collection of the apparatus. 35 40

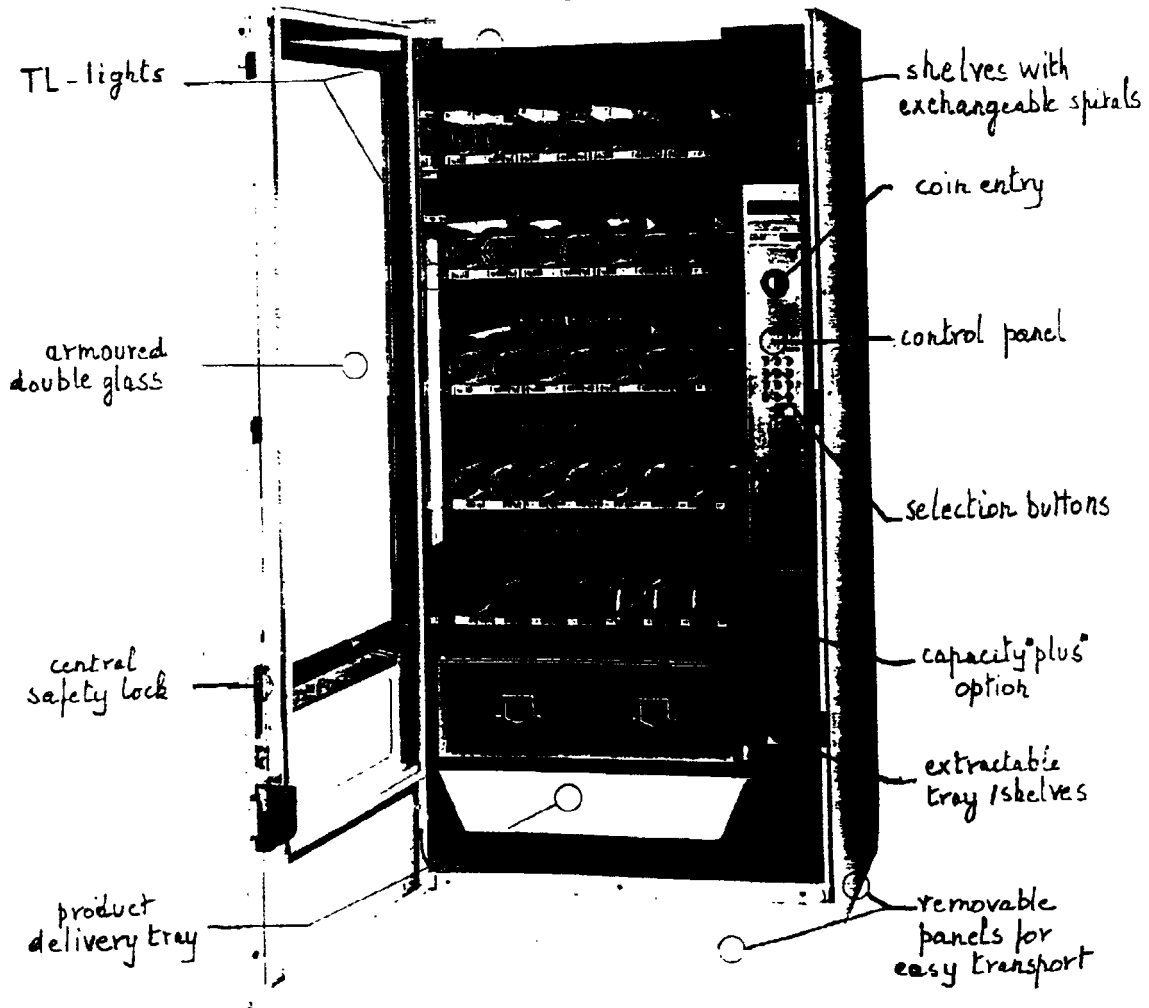
3. Method of dispensing bicycle and/or motorcycle parts and/or accessories, characterized in that said parts are disposed in a vending apparatus to be operated by customers, wherein said parts and/or accessories are visibly displayed and are provided with a selection-reference and cost price visible for customers, and wherein the vending apparatus controls the following operations carried out by a customer: 45 50

- selecting a part and/or accessory to be dispensed by the apparatus,
- introducing at least the minimum cost price for 55

said selected part or accessory by means of one or more bank notes and/or coins,

or vice versa.

Fig. 1

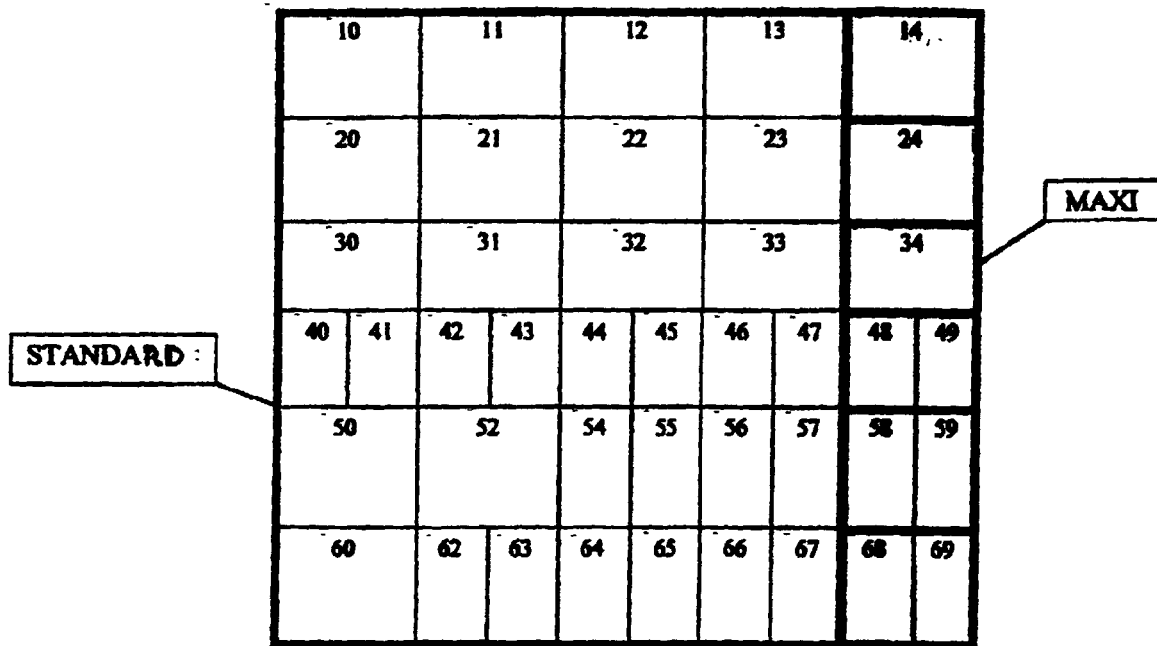


- Service friendly:
- telescopic panel chassis extraction
 - electronic selection / paying elements fixed in panel unit
 - apparatus door free of electr. components



protected coin entry slot

Fig. 2



STANDARD

Subdivisions:

- 6 shelves
- 33 possibilities (max. 48)
- Capacity: 467 products

MAXI

Subdivisions:

- 6 shelves
- 42 possibilities (max. 60)
- Capacity: 619 products



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 99 20 0743

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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 14 July 1999	Examiner David, J
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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