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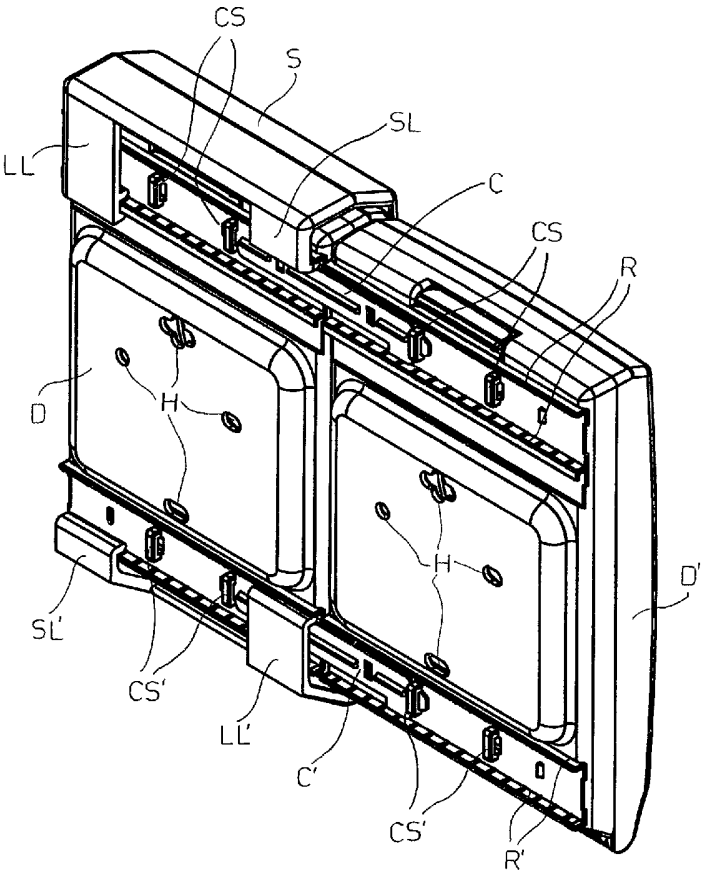
(54) **Title:** MODULAR MULTIPLE DISPENSER



(57) **Abstract:** A modular multiple dispenser consists of tow or more identical dispensing units (D, D') rigidly connected through two connecting members (C, C') that engage corresponding seats (CS, CS') formed on the rear of said dispensing units (D, D'). The dispenser may include one or more covers (S) suitable to slide from a dispensing unit (D) to an adjacent dispensing unit (D'), each cover (S) being substantially C-shaped and slidably mounted on the dispensing units (D, D') through rear terminal legs (LL, SL, SL', LL') that engage relevant guide ribs (R, R') formed on the rear of the dispensing units (D, D').

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"MODULAR MULTIPLE DISPENSER"

The present invention relates to dispensers for hygienic items and the like intended for wall mounting, and in particular to a modular multiple dispenser provided with a sliding cover.

It is known that in public toilets, hotel rooms and the like there are provided wall dispensers for various flat items that usually consist of a housing, typically fixed by screws and expansion plugs, provided with a lid hinged thereto so that it can be opened for replenishment when the items are finished. Specific reference will be made hereafter to a dispenser for hygienic bags for ladies, while it is clear that what is being said can also be applied to dispensers for other items such as paper handkerchiefs/towels, WC seat covers, toilet paper sheets, disposable gloves, plastic bags, etc.

Obviously, the size of such a dispenser may change depending on the dispensed item and on the number of items that it is intended to contain. The number of items is in turn defined by the number of users of the dispenser and by the frequency of intervention by the operator in charge of the checking and replenishment of the dispenser.

This results in the necessity to have dispensers of greater or smaller size depending on the number of items to be contained, which implies an increase in manufacturing costs due to the different moulds required, as well as a greater difficulty in stock management and production organization.

Furthermore, if the capacity of the selected dispenser turns out to be insufficient the only possible solutions are an increase in the replenishment frequency, its replacement with a dispenser of greater size or the addition of a further dispenser. However, the replacement of the previous dispenser or the addition of a further dispenser imply a further mounting operation, with a subsequent increase in the number of holes made in the wall.

Therefore the object of the present invention is to provide a dispenser that is free from said drawbacks. This object is achieved by means of a modular multiple dispenser consisting of two or more identical dispensing units rigidly connected

through connecting members. Other advantageous features of the present dispenser are disclosed in the dependent claims.

The main advantage of the present multiple dispenser is therefore that of allowing to select the number of items to be contained without requiring to manufacture different sizes of the dispenser, with a consequent saving both in the manufacturing phase and in the product management phase.

A second advantage of this dispenser stemming from its modularity is the possibility of changing, even temporarily, the capacity of the dispenser by adding or removing dispensing units without leaving marks on the wall. In fact, thanks to the rigid connection between the dispensing units it is also possible to fix onto the wall only the first unit whereas the other one or more units connected thereto do not require further mounting holes.

As a consequence, for example, it is possible to increase the capacity of the dispenser to cope with a greater request of items and/or with a lower replenishment frequency by adding one or more additional units that can then be removed without leaving marks.

A further advantage of the present multiple dispenser, in a preferred embodiment thereof, is that of providing a sliding cover that directs the user to the dispensing unit currently in use. In this way each unit is completely emptied prior to passing to the following unit, and this makes easier the task of the operator in charge of the replenishment.

Still another advantage of said modular dispenser is given by its simplicity and cheapness, in that it includes only three or four different pieces with a resulting low manufacturing cost. Moreover, the assembling of said pieces is foolproof since the lid and the possible sliding cover can be mounted on the housing in one way only, while the connecting members are symmetrical and therefore can be mounted with any orientation.

These and other advantages and characteristics of the dispenser according to the present invention will be clear to those skilled in the art from the following detailed description of an embodiment thereof, with reference to the annexed drawings wherein:

Fig.1 is a perspective front view of a two-unit dispenser with the sliding cover located on the right unit;

Fig.2 is a side view of the dispenser of fig.1;

Fig.3 is a perspective rear view of the dispenser of fig.1;

Fig.4 is a rear view of the dispenser of fig.1;

Fig.5 is a view similar to the preceding one with the sliding cover at an intermediate position between the two units; and

Fig.6 is a view similar to the preceding one with the sliding cover located on the left unit.

With reference to figures 1 to 4, there is illustrated a modular dispenser according to the present invention that includes two dispensing units D, D' arranged side by side over which a sliding cover S horizontally slides.

It should be noted that the reference to the horizontal movement of cover S over the two dispensing units arranged side by side is not meant to be limitative, since the dispenser could be mounted also with the two dispensing units arranged one on top of the other whereby the movement of cover S would be in the vertical direction.

In the position illustrated in these figures, cover S is located on the right dispensing unit D so as to direct the user to the left dispensing unit D', which however is depicted empty.

As better shown in figures 2 and 3, cover S is substantially C-shaped and it is slidably mounted on the dispensing units D, D' through rear terminal legs that engage relevant guide ribs. More specifically, the top coupling between cover S and the dispensing units is achieved through a long leg LL and a short leg SL, formed adjacent to the side edges of cover S, that engage two parallel top ribs R formed on the rear of the dispensing units. In particular, the lower rib R is preferably shaped as an inverted L to achieve a bidirectional restraint with the end of the long leg LL, said end being substantially G-shaped, whereas the end of the short leg SL, substantially L-shaped, engages from below the upper rib R.

Similarly, the bottom coupling between cover S and the dispensing units is achieved through a short leg SL' and a long leg LL', formed adjacent to the side

edges of cover S and respectively opposite the top legs LL and SL, that engage two parallel bottom ribs R' formed on the rear of the dispensing units. In this case the two legs LL' and SL' both have ends shaped as an inverted L that respectively engage the top rib R' from below and the bottom rib R' from above.

In brief, the ends of the four legs of cover S engage the respective guide ribs so as to slide in the two regions between the two pairs of ribs R and R'. In this way it is possible to easily obtain end stops for the movement of cover S, as described further on.

It is obvious that the guide ribs R, R' and the terminal legs of cover S are arranged in areas that are recessed with respect to the central raised portion, in which the holes H for the wall mounting are formed, otherwise their distance from the wall would not be sufficient for the sliding movement of cover S.

The rigid connection between the two dispensing units D, D' is achieved through two connecting members C, C' arranged astride said dispensing units. More specifically, the connecting members C, C' consist of metallic elongated plates with substantially arrowhead-shaped ends that engage corresponding bridge-shaped seats CS, CS' formed on the rear of the dispensing units respectively between the two pairs of ribs R and R'.

It is to be noted that each dispensing unit D, D' includes two pairs of seats CS, CS' for the connection to two adjacent units, although a seat CS and a seat CS' of each unit remain unused in the illustrated embodiment that includes only two dispensing units.

As better shown in fig.4, each connector C, C' also has at a first end an upper tooth TU, TU' extending up to the upper rib R, R' and at the other end a symmetrical lower tooth TL, TL' extending up to the lower rib R, R'. These teeth act as end stops to limit the sliding movement of cover S by stopping the ends of the legs of the latter that slide in the two regions between the two pairs of ribs R, R'.

This function of connectors C, C' is clearly illustrated in figures 4 to 6 that show the sliding of cover S from dispensing unit D to the adjacent dispensing unit D'. In the initial position of fig.4, in which cover S is over dispensing unit D, the

outward sliding of the cover is limited by the top short leg SL that abuts against the upper tooth TU of the top connector C and by the bottom long leg LL' that abuts against the upper tooth TU' of the bottom connector C'.

When cover S is shifted toward dispensing unit D', as shown in the intermediate position of fig.5, the above-mentioned legs SL and LL' are free to slide along the upper edge of connectors C and C', respectively, passing onto the rear of dispensing unit D'. At the same time, the other two legs LL and SL' enter the space between the lower ribs R, R' and the lower edge of connectors C, C' respectively.

The horizontal shifting of cover S proceeds until the latter reaches on dispensing unit D' a position similar to the position that it had on dispensing unit D. In fact, the movement is stopped by the top long leg LL that abuts against the lower tooth TL of the top connector C and by the bottom short leg SL' that abuts against the lower tooth TL' of the bottom connector C', as shown in fig.6.

It is clear that the above-described and illustrated embodiment of the dispenser according to the invention is just an example susceptible of various modifications. In particular, the number of dispensing units can change and with that also the corresponding number of sliding covers, that can be stopped by end stops different in number, shape and arrangement with respect to the above-illustrated end stops of the shaped connectors.

Similarly, the rigid connection between the dispensing units may be achieved through connectors different in number, shape and arrangement and the same obviously applies to the corresponding seats that are engaged by the connectors.

Finally, also the sliding covers can be differently shaped, in particular as to the coupling and guiding elements that engage the dispensing units.

CLAIMS

1. Modular multiple dispenser intended for wall mounting, characterized in that it consists of two or more identical dispensing units (D, D') rigidly connected through connecting members (C, C') that engage corresponding seats (CS, CS') formed on said dispensing units (D, D').

2. Modular multiple dispenser according to claim 1, characterized in that the rigid connection between two adjacent dispensing units (D, D') is achieved through two connecting members (C, C') arranged astride said dispensing units (D, D').

3. Modular multiple dispenser according to the preceding claim, characterized in that the connecting members (C, C') consists of metallic elongated plates with substantially arrowhead-shaped ends that engage corresponding seats (CS, CS') formed on the rear of the dispensing units (D, D').

4. Modular multiple dispenser according to one of the preceding claims, characterized in that it includes one or more covers (S) suitable to slide from a dispensing unit (D) to an adjacent dispensing unit (D'), said dispenser including end stops suitable to limit the sliding movement of said one or more covers (S).

5. Modular multiple dispenser according to the preceding claim, characterized in that each cover (S) is substantially C-shaped and is slidably mounted on the dispensing units (D, D') through rear terminal legs that engage relevant guide ribs formed on the rear of the dispensing units (D, D').

6. Modular multiple dispenser according to the preceding claim, characterized in that the guide ribs and the rear terminal legs of the cover (S) are arranged in areas that are recessed with respect to a central raised portion, in which the holes (H) for the wall mounting are formed.

7. Modular multiple dispenser according to the preceding claim, characterized in that a top coupling between the cover (S) and the dispensing units (D, D') is achieved through a long leg (LL) and a short leg (SL), formed adjacent to the side edges of the cover (S), that engage a pair of parallel top ribs (R) and a similar bottom coupling is achieved through a short leg (SL') and a long leg

(LL'), formed adjacent to the side edges of the cover (S) and respectively opposite the top legs (LL, SL), that engage a pair of parallel bottom ribs (R').

8. Modular multiple dispenser according to the preceding claim, characterized in that the ends of the four legs (LL, SL, SL', LL') of the cover (S) engage the respective guide ribs (R, R') so as to slide in the two regions between the two pairs of ribs (R, R').

9. Modular multiple dispenser according to the preceding claim, characterized in that the seats (CS, CS') for the connecting members (C, C') are formed between the two pairs of ribs (R, R').

10. Modular multiple dispenser according to the preceding claim, characterized in that the connecting members (C, C') have at a first end an upper tooth (TU, TU') extending up to the upper rib (R, R') and at the other end a symmetrical lower tooth (TL, TL') extending up to the lower rib (R, R').

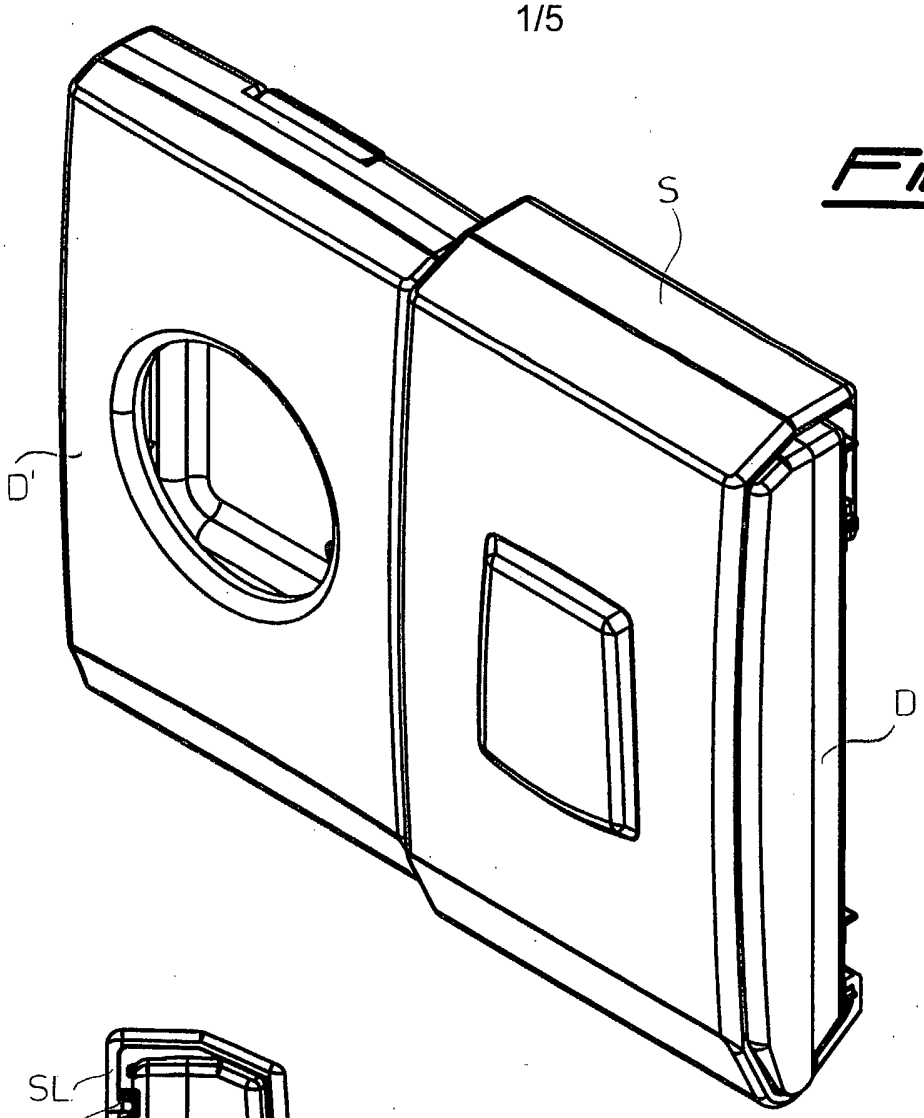

Fig.1

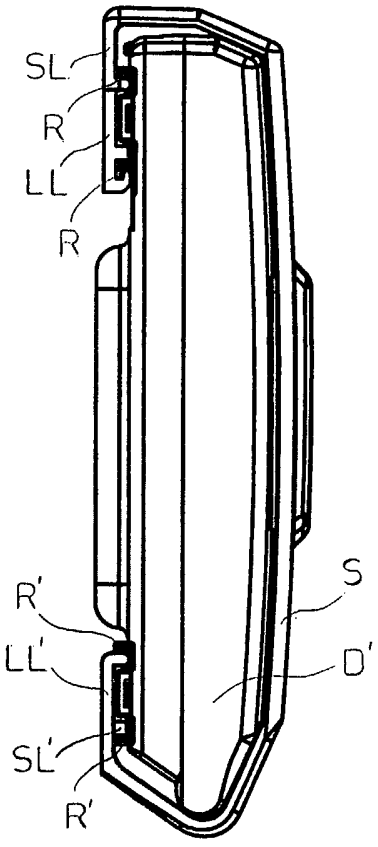

Fig.2

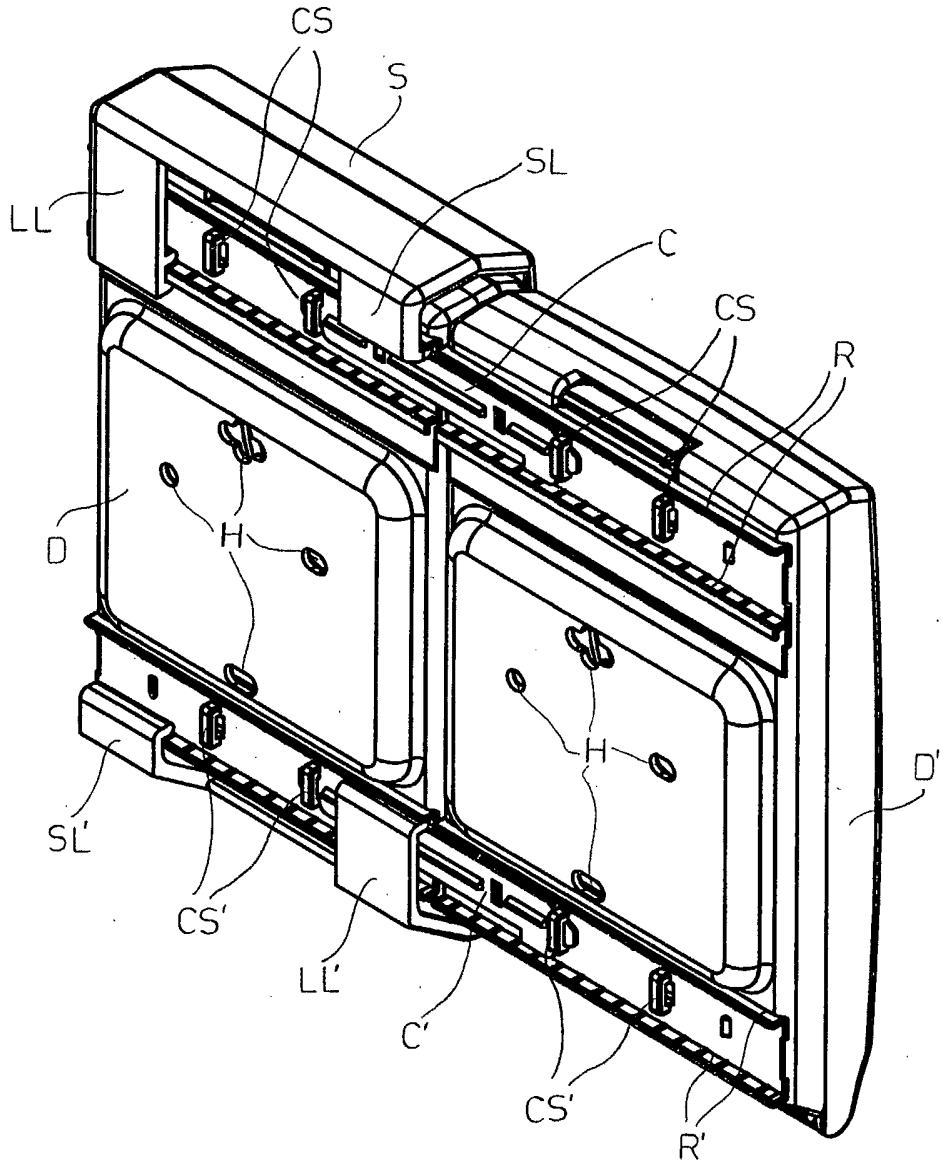

Fig. 3

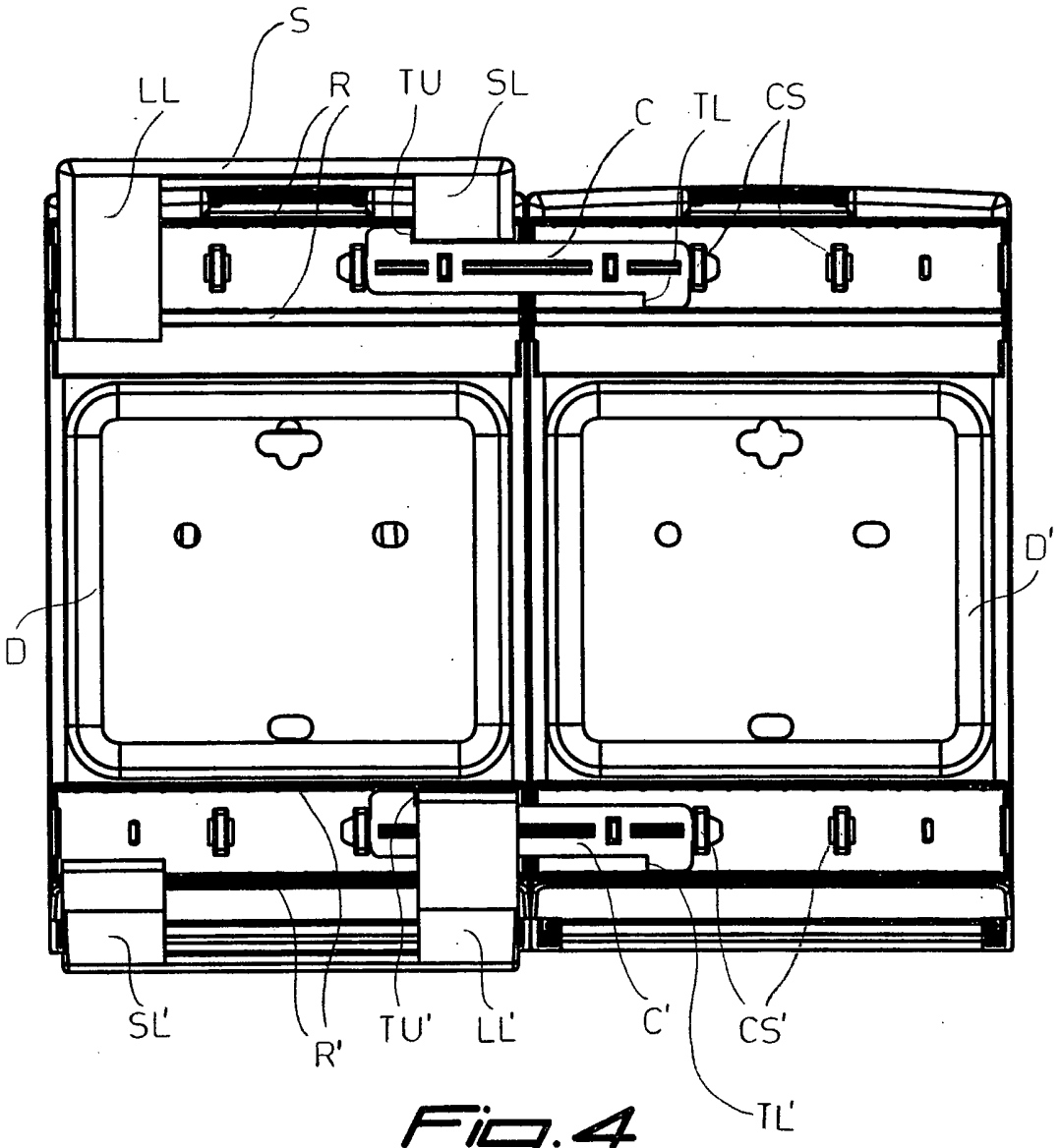

Fig.4

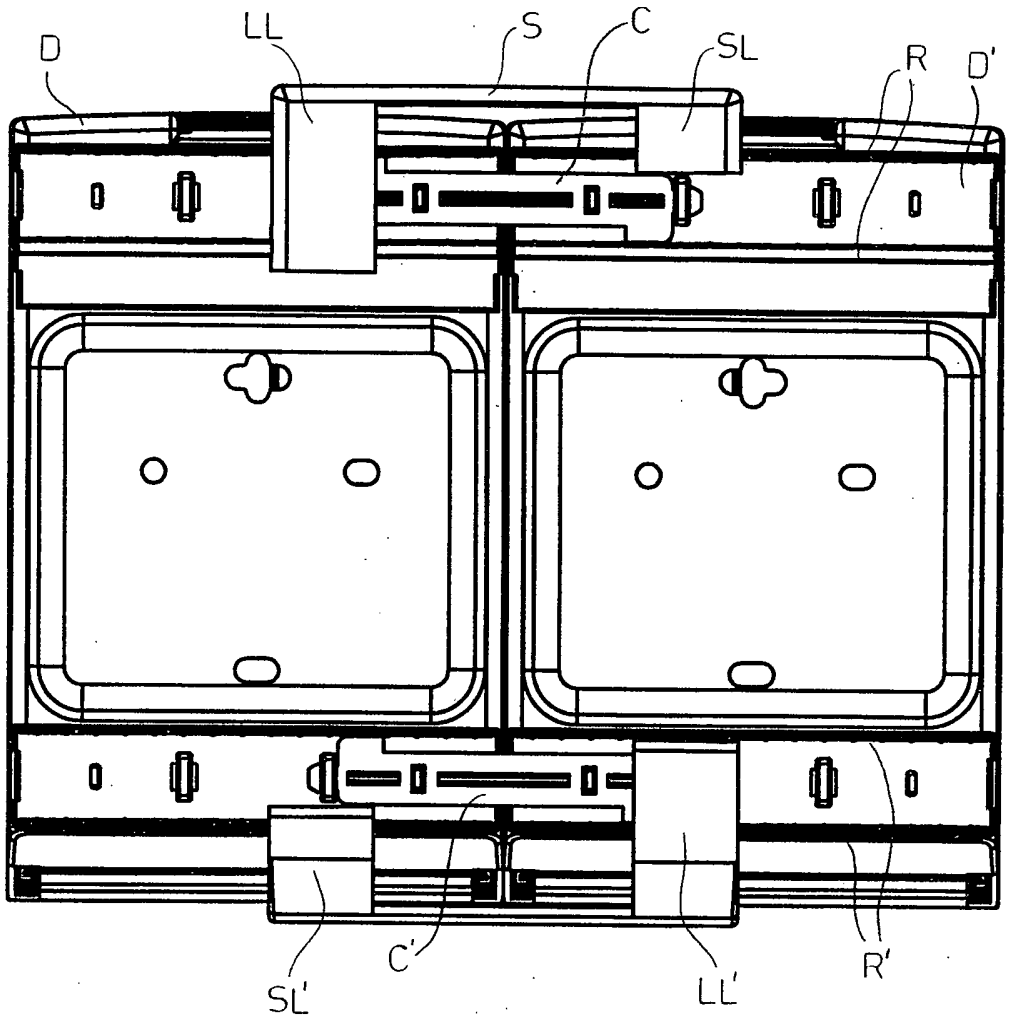

Fig.5

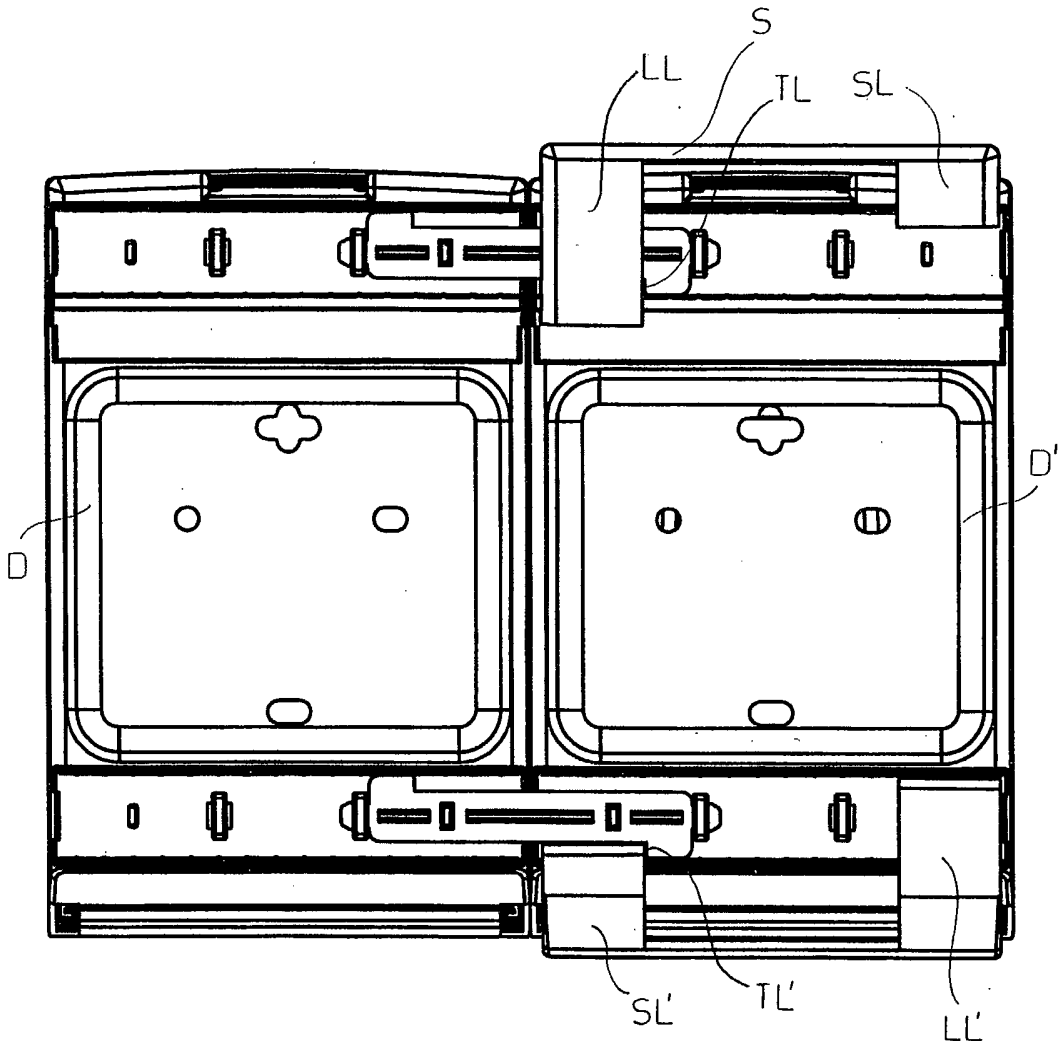

Fig.6

INTERNATIONAL SEARCH REPORT

Inter nal Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47K10/42 A47K17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A47K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 078 016 A (JUDY GLEN E) 19 February 1963 (1963-02-19) the whole document	1,2
X	US 4 899 886 A (JOHANSEN ET AL) 13 February 1990 (1990-02-13) the whole document	1,2
X	US 5 277 332 A (ROGERS ET AL) 11 January 1994 (1994-01-11) the whole document	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
27 July 2005	03/08/2005

Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

ormation on patent family members

Inter nal Application No
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3078016 A	19-02-1963	NONE	
US 4899886 A	13-02-1990	NONE	
US 5277332 A	11-01-1994	NONE	