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(54) Container removably associated to a ceiling and method for stowing objects

(57) An apparatus for stowing / storing objects in a raised position relative to a treaded surface, comprising at least one container (2), anchoring means preferably applied to a ceiling and means for actuating the container (2) from the raised position to a loading / unloading position at man height, and vice versa, said means for ac-

tuating the container (2) consisting preferably of articulated arms (4), each of which comprises a plurality of rod-like elements (7).

A method for storing objects, which comprises the anchoring of at least one container to a ceiling and a step of actuating the container in a loading / unloading position at man height and back.

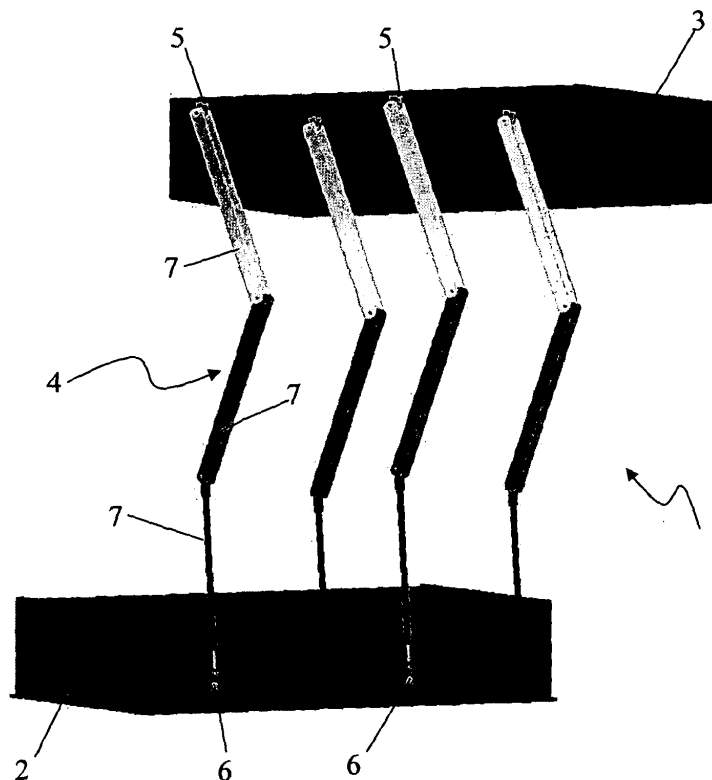


FIG. 1

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Description

[0001] The present invention relates to a container removably associated to a ceiling and a method for stowing objects.

[0002] With regard to the need to stow objects, and to file or store material, the use of containers set down on the floor, e.g. cabinets, chests of drawers, or dressers, is known. In this type of containers, the space dedicated to stowing the objects may or may not be divided into compartments. In general, users' accessibility to this space and to the different compartments is obtained by opening / closing wing doors or moving compartments (e.g. drawers) in a substantially horizontal direction. However, all containers set down on the floor markedly reduce the surface area which persons may tread upon. This disadvantage is particularly severe where available space is scarce in itself, e.g. in small flats, as well as in cellars or car parking spots, especially within urban housing complexes, where spaces are small and the cost of the surface area available for treading is particularly high. Also known is the use of shelves of various kinds fastened to the walls. These solutions, in turn, have numerous drawbacks. First of all, objects set down on shelves tend to become degraded by effect of dust, unless they are stowed in closed containers, whose preparation entails a further expense in terms of time and money. Moreover, shelves and other support surfaces fastened to the walls allow to exploit only a very limited portion of the surface of the space in which the objects are to be stowed.

[0003] An object of the present invention is to eliminate the aforesaid drawbacks and to make available an apparatus for stowing / storing objects in a raised position with respect to a treaded surface, comprising at least a container and anchoring means able to support the container in said raised position, in such a way as not to limit the treaded surface of the space, whilst assuring ease of access to persons.

[0004] Said objects are fully achieved by the container of the present invention, which is characterised by the content of the claims set out below and in particular in that it comprises means for actuating the container from said raised position to a loading / unloading position at man height, and vice versa.

[0005] An additional object of the present invention is to make available a method for stowing objects in containers, which minimises the actual overall dimension of the containers themselves, i.e. without limiting the volume of the space used by persons.

[0006] Said object is fully achieved by the method of the present invention, which is characterised by the content of the claims set out below and in particular in that it comprises the following steps:

- anchoring at least one container to a ceiling;
- actuating the container or compartments thereof in a loading /unloading position at man height and returning to a stowage position, substantially adjacent

to the ceiling.

[0007] The characteristics and the advantages of the present invention shall become readily apparent in the detailed description that follows of a preferred embodiment, illustrated purely by way of non limiting example in the accompanying drawing tables, in which:

- Figure 1 shows an apparatus according to the present invention;
- Figure 2 shows an apparatus as in Figure 1, but in a different position;
- Figure 3 shows an apparatus as in Figure 1, but in a different embodiment;
- Figure 4 shows a plurality of apparatuses according to the present invention.

[0008] In Figure 1, the reference number 1 designates an apparatus for stowing / storing objects in an environment, according to the present invention; the reference number 2 designates a container able to house the objects to be stowed. The reference number 3 designates a covering element, supported in a raised position relative to a treaded surface of said space, in such a way as not to interfere therewith. To support the covering element 3 in the raised position, anchoring means are used, not shown in the figures, which preferably, but not necessarily, comprise screws coupled with dowels, able to be applied to a ceiling of said space. Said anchoring means support the entire apparatus 1 at a certain height from the treaded surface, in order not to interfere therewith. The container is connected to the anchoring means by actuating means, able to actuate the container 2 between the raised position and a loading / unloading position at man height. Figure 1 shows the container 2 in the loading / unloading position, whilst Figure 2 shows the container 2 in the raised position. In the closed position, the container 2 substantially faces the covering element 3, which serves the purpose of preserving and protecting the container 2, and of constituting a guide for the movement of the container, at the raised position. However, it should be noted that the covering element 3 is not essential; in a different embodiment of the apparatus 1, the container 2 and the actuating means are associated directly to the anchoring means, with no need to interpose the covering element.

[0009] In the embodiment shown in Figures 1 and 2, the actuating means comprise a plurality of arms 4. Each arm 4 has a first end 5 connected to the anchoring means, or, alternatively, to the covering element 3 or, otherwise, directly to a ceiling, and a second end 6 connected to the container 2. Each arm comprises a plurality of rod-like elements 7, mutually coupled in order to be able to rotate and/or translate relative to each other. Said couplings exploit, in a preferred but not exclusive embodiment, pivot pins to allow relative rotations between the rod-like elements and telescopic couplings to allow relative translations between the rod-like elements. Each arm 4 is mov-

able between a first position in which the second end 6 is in raised position, in proximity to the first end 5, and a second position in which said second end 6 is in the loading / unloading position. Moreover, each arm 4 comprises a plurality of elastic means, not shown in the figures, able to maintain, under resting conditions, the arm in said first position.

[0010] In the embodiment shown in Figure 3, the means for actuating the container comprise a rope 8 connected to the container 2 and to the anchoring means, e.g. by a plurality of transmissions or pulleys 9, and means for winding / unwinding the rope 8, with consequent rising / lowering of the container 2. Said means for winding / unwinding the rope 8 comprise, preferably but not necessarily, a reel 10 which may be associated to an electric motor 11. In this way, it is possible to wind the rope 8 on the reel 10 manually or, in the presence of the electric motor 11, by means of a switch positioned at man height.

[0011] The described apparatus 1 originally enables to stow objects exploiting a surface adjacent to a ceiling of a space with an extension that is substantially equal to the treaded surface of the same space, but without interfering therewith. Therefore, the apparatus 1, with the container 2 in raised position, does not interfere with said treaded surface or with a use of the surface by a person.

[0012] Moreover, the present invention makes available a method for storing objects, characterised in that it comprises the following steps:

- anchoring at least one container to a ceiling;
- actuating the container or compartments thereof in a loading / unloading position at man height and returning to a stowage position, substantially adjacent to the ceiling.

[0013] Said storing method originally allows to avoid the use of ladders or other tools to stow the objects on shelves in uncomfortable positions. It should also be noted that, by placing a plurality of apparatuses 1 next to each other, a false ceiling is defined, which has the advantage of being particularly pleasing from the aesthetic viewpoint, in addition to providing a form of insulation for the space.

[0014] Moreover, it should be noted that said means for winding / unwinding the rope 8 comprise means for rendering uniform the winding / unwinding of the rope 8 on the reel 10, preventing jams and allowing to minimise the bulk of the means for winding / unwinding the rope 8. Said means for rendering uniform the winding / unwinding of the rope 8 on the reel 10 are so shaped as to produce a translation of the reel 10 along its axis of rotation, the measure of said translation being equal to the thickness of the rope 8, for each complete rotation effected by the reel 10.

Claims

1. An apparatus (1) for stowing / storing objects in a raised position relative to a treaded surface, comprising at least one container (2) and anchoring means able to support the container in said raised position,
characterised in that it comprises means for actuating the container from said raised position to a loading / unloading position at man height, and vice versa.
2. Apparatus as claimed in claim 1, wherein the anchoring means are applied to a ceiling.
3. Apparatus as claimed in claim 1, **characterised in that**, with the container (2) in raised position, does not interfere with said treaded surface.
4. Apparatus as claimed in claim 1, comprising a covering element (3) irremovably associated to the ceiling in such a way that substantially faces the container (2), when the container (2) is in the raised position.
5. Apparatus as claimed in claim 1, wherein the means for actuating the container (2) allow a translation of the container (2) in a direction having a vertical component.
6. Apparatus as claimed in claim 1 or 5, wherein the means for actuating the container (2) comprise a plurality of arms (4) having a first end (5) connected to the anchoring means or to a ceiling and a second end (6) fastened to the container (2), said arms (4) being movable between a first position in which the second end (6) is in raised position and a second position in which said second end (6) is in the loading / unloading position.
7. Apparatus as claimed in claim 6, wherein each arm (4) is articulated, i.e. it comprises a plurality of rod-like elements (7) connected to each other in such a way as to be able to rotate and/or to translate relative to each other.
8. Apparatus as claimed in claim 6, wherein each arm (4) comprises elastic means able to maintain, under resting conditions, the second end (6) of each arm (4) substantially in the raised position.
9. Apparatus as claimed in claim 1, wherein the means for actuating the container (2) comprise a rope (8) connected to the container (2) and to the anchoring means and means for winding / unwinding the rope.
10. Method for storing objects, **characterised in that** it comprises the following steps:

- anchoring at least one container (2) to a ceiling;
- actuating the container (2) or compartments thereof in a loading /unloading position at man height and returning to a stowage position, substantially adjacent to the ceiling.

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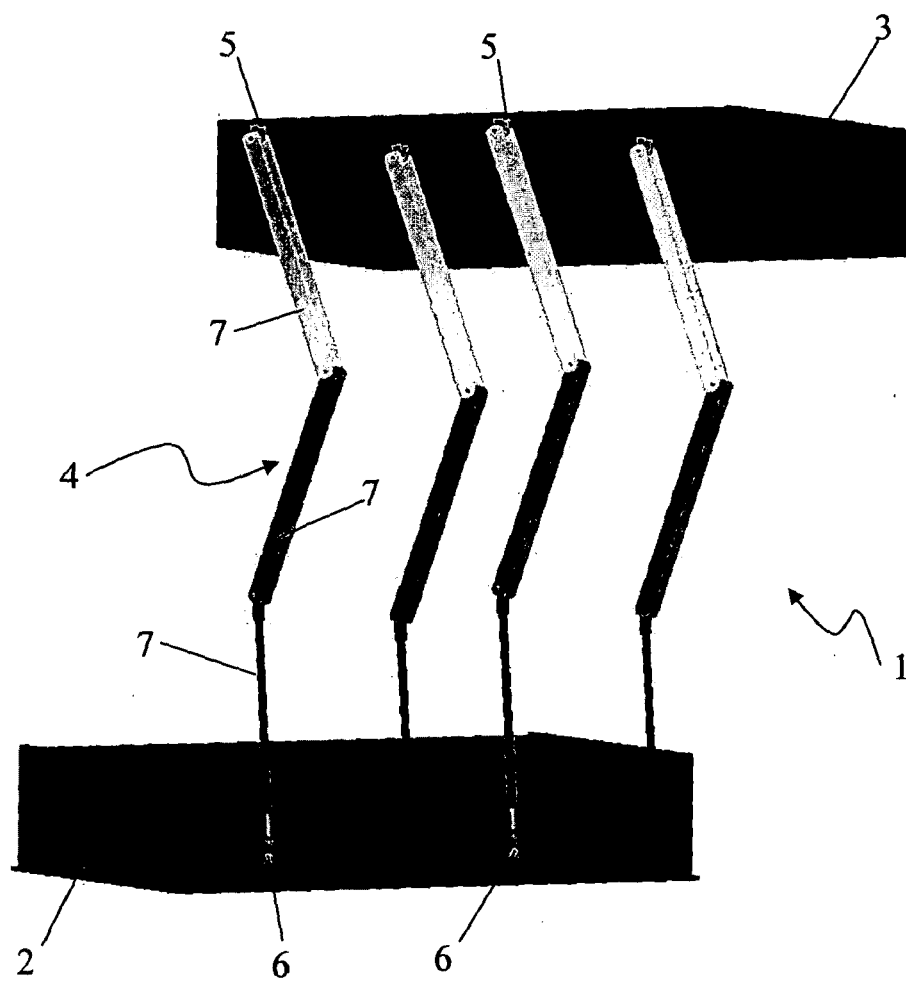


FIG. 1

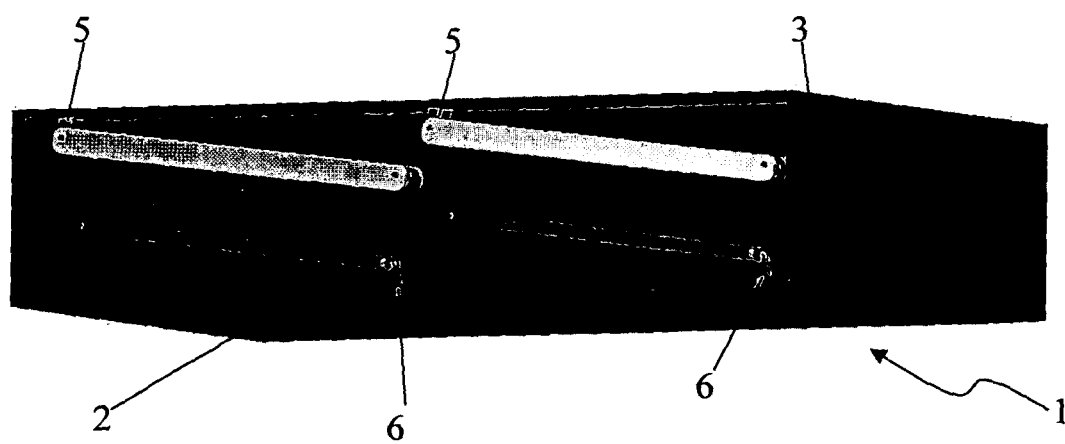


FIG. 2

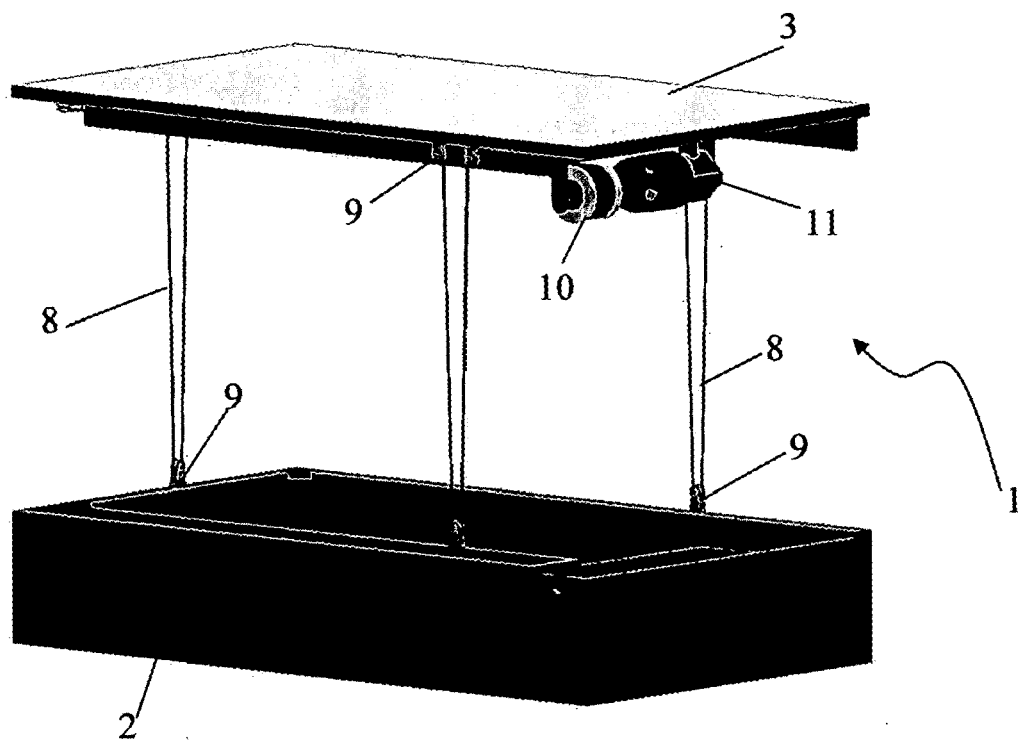


FIG. 3

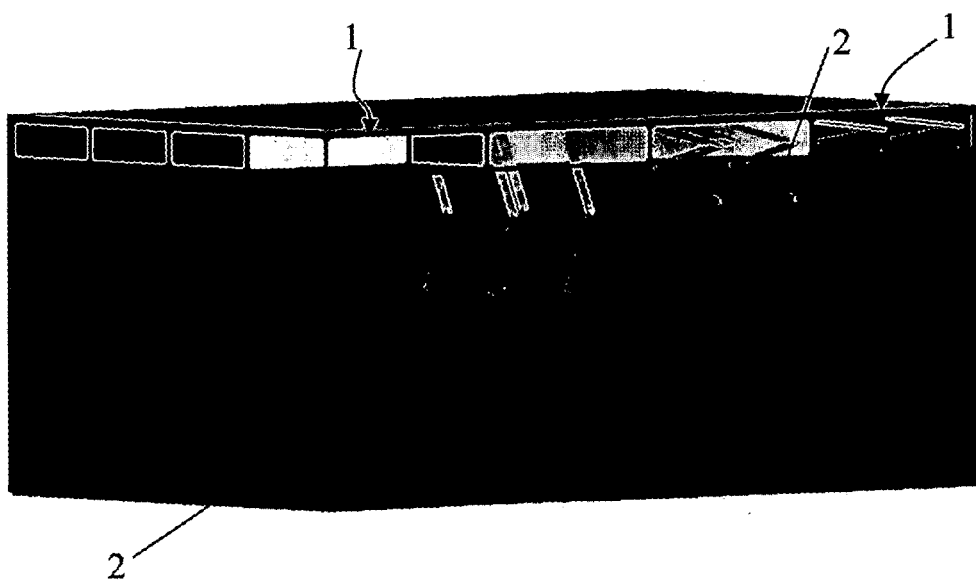


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 05 01 9199

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Place of search		Date of completion of the search	Examiner
The Hague		25 January 2006	van Hoogstraten, S
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EUROPEAN SEARCH REPORT

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Place of search The Hague		Date of completion of the search 25 January 2006	Examiner van Hoogstraten, S
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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