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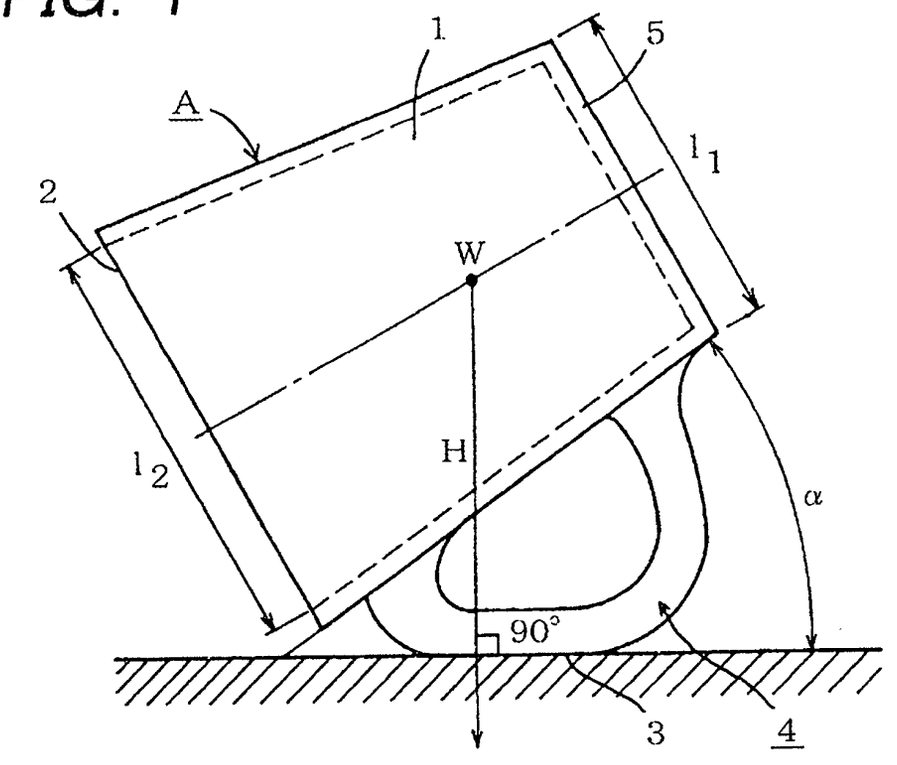
(54) OBLIQUELY INVERTIBLE CUP AND SUPPORT FOR OBLIQUELY INVERTIBLE CUP

(57) The present invention provides an obliquely invertible cup that is handy in that, after use, the cup body can be obliquely inverted to allow the liquid remaining therein to flow down for hygienically drying the cup and in that a number of such cups can be stacked so as to reduce a stacked volume when shipping and transporting. The obliquely invertible cup is a kind of cup made of glass, plastic, ceramic or the like, wherein the cup body 1 has a diameter of an opening 2 larger than a diameter of its bottom 5, and a support base 3 enabling the cup body to stand with the opening 2 of the cup body being tilted downward is formed on an intermediate portion of a semi-annular handle 4 connected to the periphery of the cup body 1 via an protruding upper portion 6 of the handle, while a lower portion 7 of the handle is disconnected to the cup body so as to form a discontinuous portion X.

FIG. 1



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Description

[Field of the Invention]

[0001] The present invention relates to an obliquely invertible cup, used as an ordinary cup as being stood uprightly, capable of being kept in an obliquely inverted state for well draining after washing and laying one over another so as to reduce packaged volume for shipping, transporting or storing in a compact state, and relates to a support for keeping an ordinary cup in the obliquely inverted state.

[Background of the Related Art]

[0002] Usually a cup made of glass, plastic, ceramic or the like is always laid on a table or a tray as utilizing its outer bottom, when used as well as not in use.

[0003] However, a slight quantity of liquid is remained on an inner bottom of the cup even after a drink is drank up, which causes deposits on the inner bottom and it is inevitable to bring the cup into an unhygienic state.

[0004] Supports for supporting cups in the inverted state have been known. However, since tips of the supports are contacted to the inner bottoms of cups when fitting, there is a problem that contacted portions of the inner bottoms are brought into the unhygienic state

[0005] The present invention is carried out in view of the above-mentioned problems in order to provide an obliquely invertible cup with well draining capability to let remaining liquid flow out of the cup completely when inverted after used, and a support for keeping the ordinary cup in the obliquely inverted state. A basic idea of the present invention was filed as a patent application No. 10-109659 to the Japanese Patent Office.

[0006] In addition the present invention provides a cup capable of laying one over another for shipping/transporting or capable of storing in a compact state.

[Brief Description of Drawings]

[0007]

FIG.1 is a side view illustrating an obliquely inverted state of one embodiment of the obliquely invertible cup according to the present invention.
FIG.2 is a rear view of the cup shown in FIG.1.
FIG.3 is a bottom view of the cup shown in FIG.1.
FIG.4 is a side view illustrating the cup shown in FIG.1 placed in an upright state.
FIG.5 is a side view illustrating an obliquely inverted state of other embodiment of the obliquely invertible cup according to the present invention.
FIG.6 is a side view illustrating a stacked state of a plurality of obliquely invertible cups shown in FIG.5.
FIG.7 is a side view illustrating a used state of other embodiment of a partially modified obliquely invertible cup shown in FIG.5.
FIG.8 is a front view of the cup shown in FIG.7.
FIG.9 is a side view illustrating an inverted state of other embodiment of an obliquely invertible cup.
FIG.10 is a side view illustrating a support of one embodiment for inverting the ordinary cup obliquely.
FIG.11 is a front view of the support shown in FIG. 10.

[Detailed Description of the preferred Embodiments]

[0008] FIGs.1 to 4 illustrate a basic concept of the present invention. FIGs.1 to 3 are respectively the side view, the rear view and the bottom view illustrating the obliquely inverted state of the obliquely invertible cup. FIG.4 is the side view illustrating the cup uprightly placed on a table.

[0009] In respective figures, a reference numeral "1" is a cylindrical cup body with a desired shape having an opening 2, capable of accommodating liquid such as water or the like. A reference numeral "3" is a support base formed on the nearly center portion of the outside of a semi-annular or arch-shaped handle 4 attached to the periphery of the cup body 1 in order to form an inclined angle α between the cup body 1 and the handle 4 so that a gravity force from a center of gravity W depicted as a perpendicular line H cross the support base 3 (see FIG.1). Therefore the cup body 1 can be obliquely inverted as keeping the predetermined angle.

[0010] In this embodiment a (inner) diameter l_2 of the opening 2 of the cylindrical cup body 1 is arranged larger than a (outer) diameter l_1 of a bottom 5 of the cup body so that the cup body has a tapered peripheral surface. However a cylindrical peripheral surface can be also employable (not shown).

[0011] If the inclined angle α is too small, the cup is placed almost in a lying state on its side, which is not effective for draining. Therefore, the larger the angle is, the more preferable. But if the angle nears to 90 degrees, the cup is brought in an unstable state. Preferably the angle is admitted to set between 50 to 30 degrees for effective draining and for a well stable inverted state.

[0012] The obliquely invertible cup A is used as a container for accommodating water and other liquid in the same way as the ordinary cup, when the cup is uprightly placed as shown in FIG.4. If the cup A is inverted as shown in FIGs.1 to 3 after being used and washed, the cup body 1 is inverted as the opening 2 being obliquely directed downward so that water droplets stuck to the inner surface of the cup flow downward, consequently no droplets are left in the cup. Therefore, the cup is dried immediately so that an unhygienic state caused by deposits is prevented, which keeps the cup in a quite good hygienic state.

[0013] The second embodiment according to the present invention is explained as referring to FIGs.5 and 6. This embodiment is based on a condition where a diameter l_2 of the opening 2 is set much larger than a diameter l_1 of the bottom 5 compared with the case of the

previous embodiment such that the more tapered periphery is formed. A different feature of the present embodiment from the previous one is that a handle 4A with a semi-annular or arched shape, comprising an upper protruding portion 6 connecting to the periphery of the cup body 1 and a lower portion 7 formed apart from the periphery of the cup body so as to form a discontinuous portion X. Other arrangements are same as the previous embodiment such that an inclined angle α is formed between the cup body 1 a supporting base 3 formed as a plane orthogonally crossing a perpendicular line H as an acting gravity force from center of gravity W of the cup. Thus the cup can be inverted as a desired predetermined acute angle being kept.

[0014] An obliquely invertible cup B according to the present embodiment has the same effects as the obliquely invertible cup A according to the previous embodiment.

[0015] However, since the handle 4A of the cup B according to the present embodiment has the discontinuous portion X as the lower portion 7 being apart from the cup body, a plurality of cups with the same shape can insert the bottom 5 of one cup B into the opening 2 of another cup B as their positions being gradually shifted. Therefore the present embodiment has an advantage of keeping a package volume not in a bulky state when cups are shipped, transported or arranged.

[0016] Further other embodiment is explained as referring to FIGs.7 and 8. FIG.7 is the side view illustrating a used state of the present embodiment of the invertible cup and FIG.8 is the front view of the cup shown in FIG. 7.

[0017] The present embodiment is modified the handle 4A of the cup B shown in FIG.5 such that an extending portion 7a is extended so as to form a C-shaped opening 7b for fitting from outside. The C-shaped opening 7b has a function to fit the cup on a hook 8 arranged on an upright plane S. Since the other portions in FIGs7 and 8 are same as the previous embodiments, the same reference characters are used in the same members and further explanation is omitted.

[0018] In addition to upright and obliquely inverted states, a cup C according to the present embodiment can be easily hung on the hook 8 or a string (not shown) arranged on the upright plane S of a wall or a furniture, since the C-shaped opening 7b is formed by extending the extending portion 7a for utilizing to hang the cup. Due to the hung state of the cup C, the opening 2 of the cup C is inclined downward, namely, the cup body 1 is inclined so that water remaining inside the cup is effectively dropped, dried, thus the cup is arranged in the hygienic state.

[0019] Further other embodiment is explained as referring to FIG.9. The figure is the side view illustrating the inverted state of the obliquely invertible cup.

[0020] In the present embodiment only a handle structure of a cup D is different from the cup B illustrated in FIGs.5 and 6 such that intermediate portion 9 is formed on the periphery of the cup body 1, a tip of an upper portion 6a forms a discontinuous portion Y and a support base 3 is formed on the outside middle portion of a handle 4C. A tip of a lower portion 7 forms a discontinuous portion X as in the cup 4A. Thus the handle 4C is modified so as to grab the cup easily.

[0021] The obliquely invertible cup D can be placed as shown in FIG.9 and also can be laid one over another as shown in FIG.6 owing to the discontinuous portion X.

[0022] The cup body 1 mentioned above can be made of to say nothing of glass, ceramic, also made of plastic or other materials. In addition, handles 4, 4A, 4B and 4C including support base 3 can be made of the same material as the cup body or different material, monolithically with the cup body or separately as desired.

[0023] Although not shown in figures, the support base can be made of a material with a high specific gravity or can be formed in a shape with a partially deadweight structure such that center of gravity of the cup is located nearly to the support base. Such structure functions as a self-righting toy so that the cup per se is obliquely inverted when the cup is placed upside down.

[0024] Further other embodiment is explained as referring to FIGs.10 and 11.

[0025] The present embodiment relates to a support E for inverting a cup obliquely.

[0026] In respective figures, a reference numeral "10" is a sucking disk capable of fixing to a horizontal table or a perpendicular wall by suction. A reference numeral "11" is a support body of the support E fitted to the sucking disk 10. As illustrated in figures, the support body 11 has a pair of bent arms 13 capable of holding a cup P (depicted in chain line) in the vicinity of an opening of the cup P by a slight spring force and has two parallel support portions 12 for supporting the periphery of the cup P. Thus the cup P can be obliquely inverted.

[0027] In these figures, two parallel support potions 12 and bent arms 13 are formed out of a wire rod, but which can be replaced by other materials if they have the same function as the wire rod. Antibacterial treatments may be applied to the support E from a hygienic point of view.

[0028] It is preferable to set an inclined angle β between 50 degrees to 30 degrees as in the previous embodiments, but not limited to this range as far as the inclined angle is set at an acute angle.

[0029] As the support E is arranged in the above-mentioned way, it can support the cup P with its opening inverted in an obliquely inverted state by utilizing support portions 12 and bent arms 13 after the sucking disk 10 is fixed to a desired position in a kitchen or a bathroom.

[0030] Consequently, water or liquid remaining in the inner surface of the cup P smoothly flows down, there is no possibility that water remains inside the cup P. The cup P is elastically supported by a pair of bent arms 13 at peripheral portions of the cup slightly apart from the opening 2 without contacting to inner surface of the cup so that the inner surface of the cup can be always kept

in the hygienic state.

[Possibilities of Application in Industries]

[0031] According to the present invention, the obliquely invertible cup can be utilized in the same way as a conventional glass, a bowl, a mug-cup or the like. In addition, the cup can be supported in the obliquely inverted state as its opening being faced downward when not in use and the support for inverting the cup obliquely can support the cup in the obliquely inverted state, water in the cup is completely flows down so that the cup is kept in the dried state immediately. Thus the cup is kept in the hygienic state by preventing deposits from generating and microorganism from breeding inside the cup.

[0032] According to the present invention, exhibited cups in the obliquely inverted state add novel image to the cups, which enhances product value and enables to expect sales promotion effects. Since the cup has the discontinuous portion in the lower portion of its handle and since the opening is set larger than the bottom, a plurality of the cups having the same shape can be laid over another with their positions gradually shifted so that cups can be arranged in a small volume, as a result there are advantages that cups are effectively shipped or transported as well as arranged for storing.

Claims

1. An obliquely invertible cup made of glass, plastic, ceramic and the like, wherein:

   a support base is formed on the periphery of the cup body so as to stand said cup on said support base in an obliquely inverted state where an opening of said cup is facing downward; and
   said support base is formed on a portion of the outside of a semi-circular handle arranged on the cup body.

2. An obliquely invertible cup made of glass, plastic, ceramic and the like, wherein:

   diameter of an opening of a cup body is formed larger than diameter of a bottom of the cup body;
   a support base is formed on a portion of the outside of a semi-circular handle arranged on the cup body so as to stand said cup on said support base in an obliquely inverted state where an opening of said cup is facing downward;
   said semi-circular handle comprises an upper protruding portion connecting to the periphery of the cup body and a lower portion disconnecting to the periphery of the cup body.

3. The obliquely invertible cup according to claim 1 or claim 2, wherein:

   said support base is formed as a deadweight so that a perpendicular line from center of gravity of the cup body passes through said support base.

4. The obliquely invertible cup according to claim 2, wherein:

   a C-shaped opening for fitting said cup is formed by extending a tip of the lower portion of said handle so that said cup is capable of being hung on a hook arranged on a wall or the like.

5. An obliquely invertible cup made of glass, plastic, ceramic and the like, wherein:

   diameter of an opening of a cup body is formed larger than diameter of a bottom of the cup body;
   a support base is formed on a portion of the outside of a semi-circular handle connected to a protrude middle portion on the cup body so as to stand said cup on said support base in an obliquely inverted state where an opening of the cup body is facing downward;
   said semi-circular handle comprises an upper portion disconnecting to the periphery of the cup body and a lower portion disconnecting to the periphery of the cup body.

6. A support capable of supporting a cup made of glass, plastic ceramic and the like in an obliquely inverted state, wherein:

   supporting portions for supporting the cup in the obliquely inverted state are arranged in said support; and
   said support has a sucking disk capable of fitting to a smooth plane at a desired position.

FIG. 1

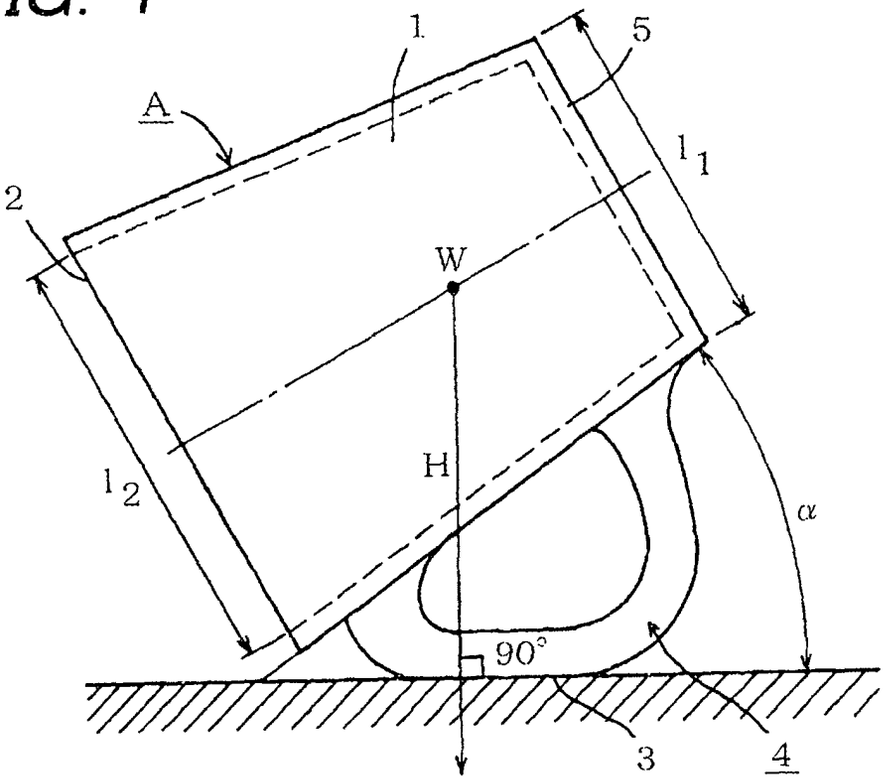


FIG. 2

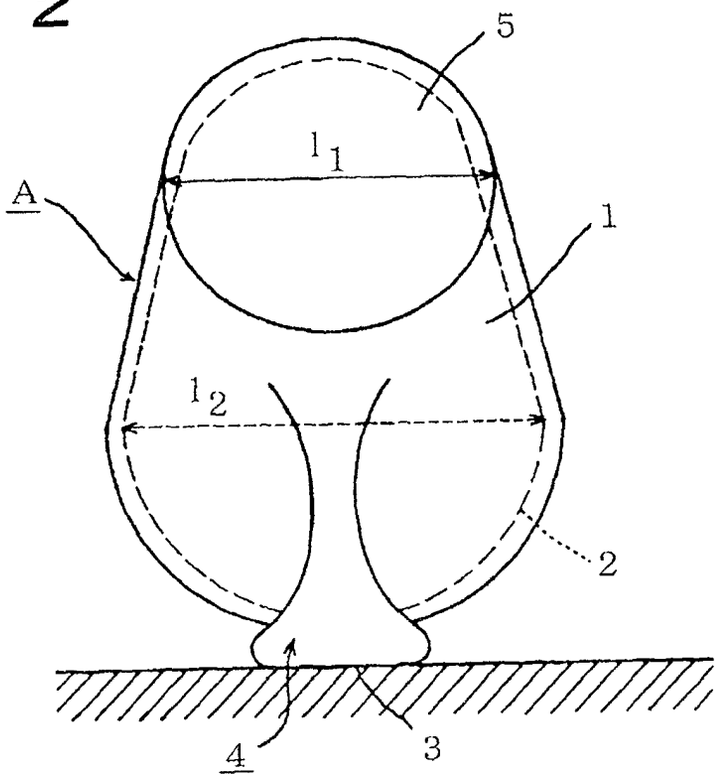


FIG. 3

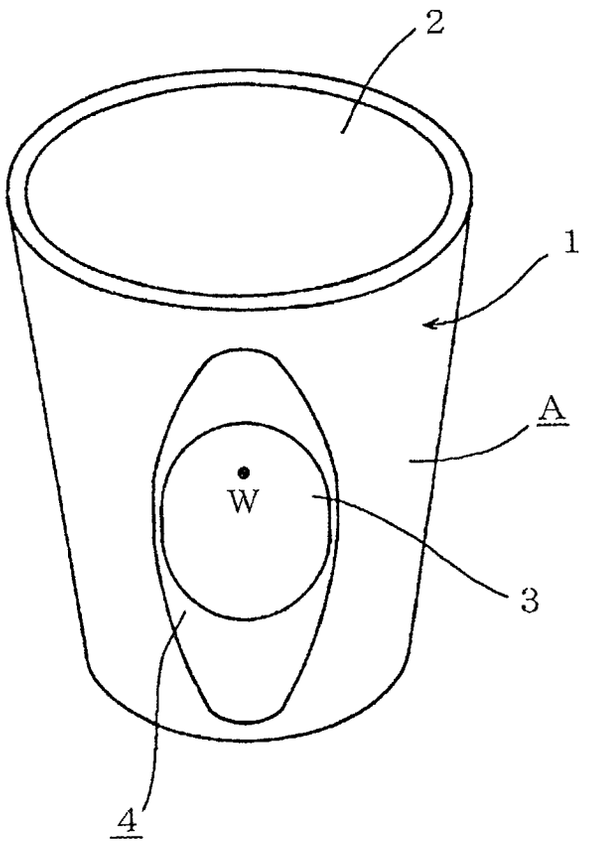


FIG. 4

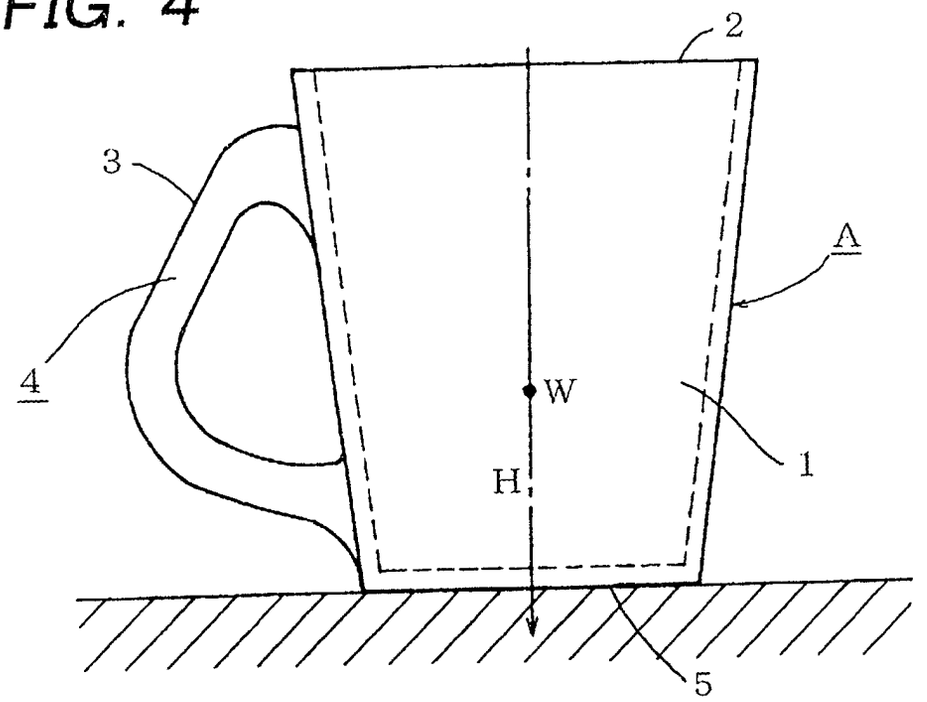


FIG. 5

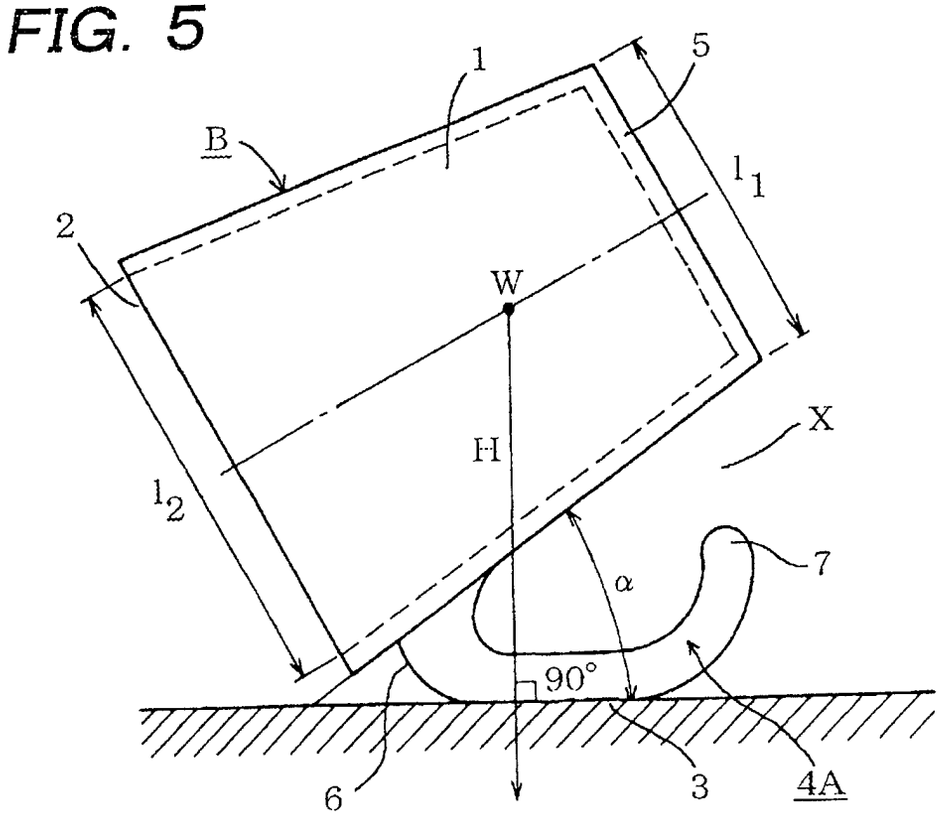


FIG. 6

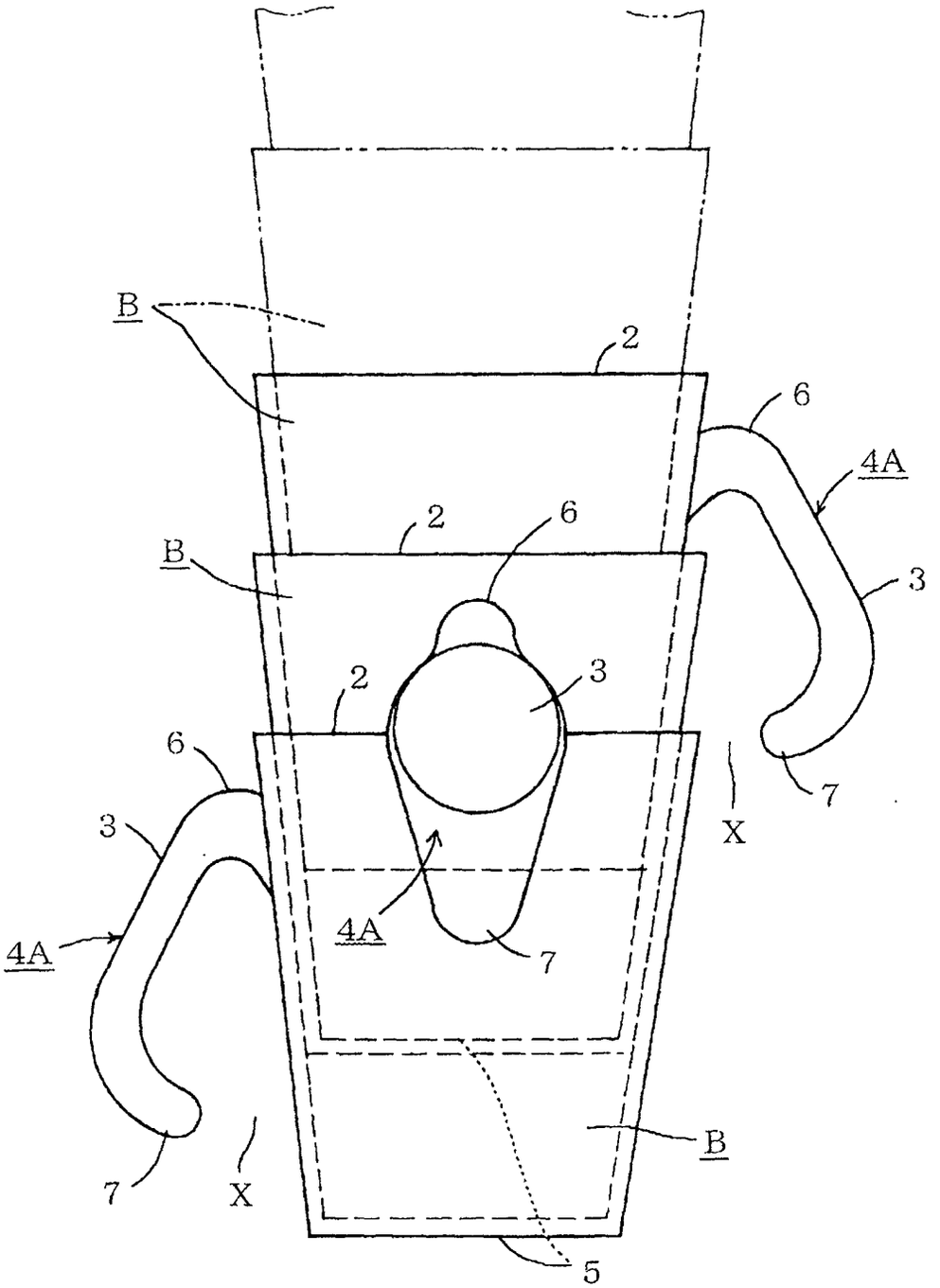


FIG. 7

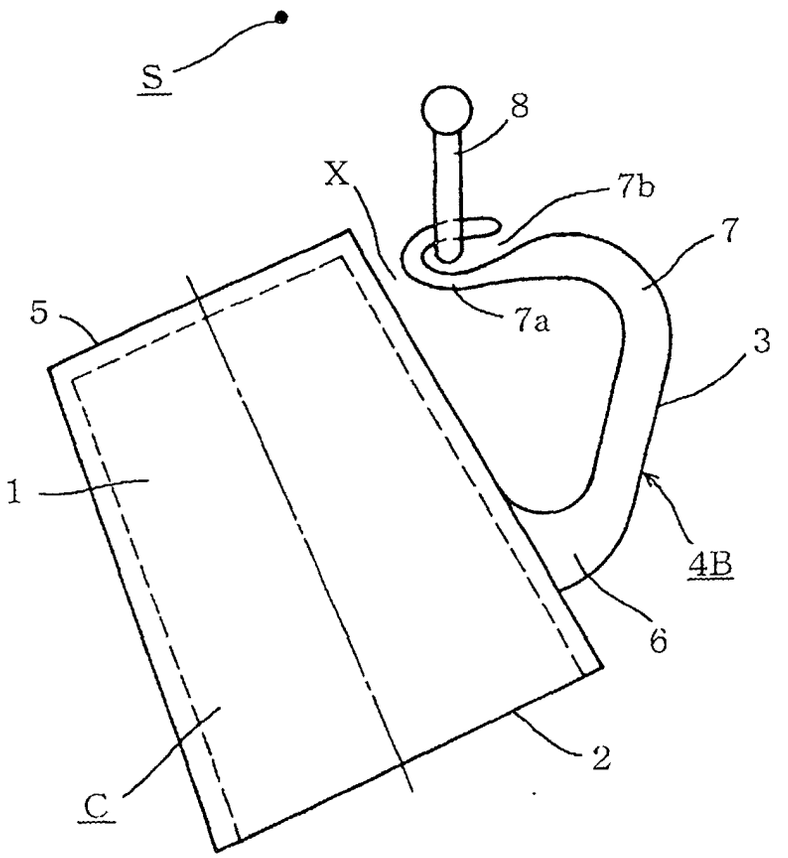


FIG. 8

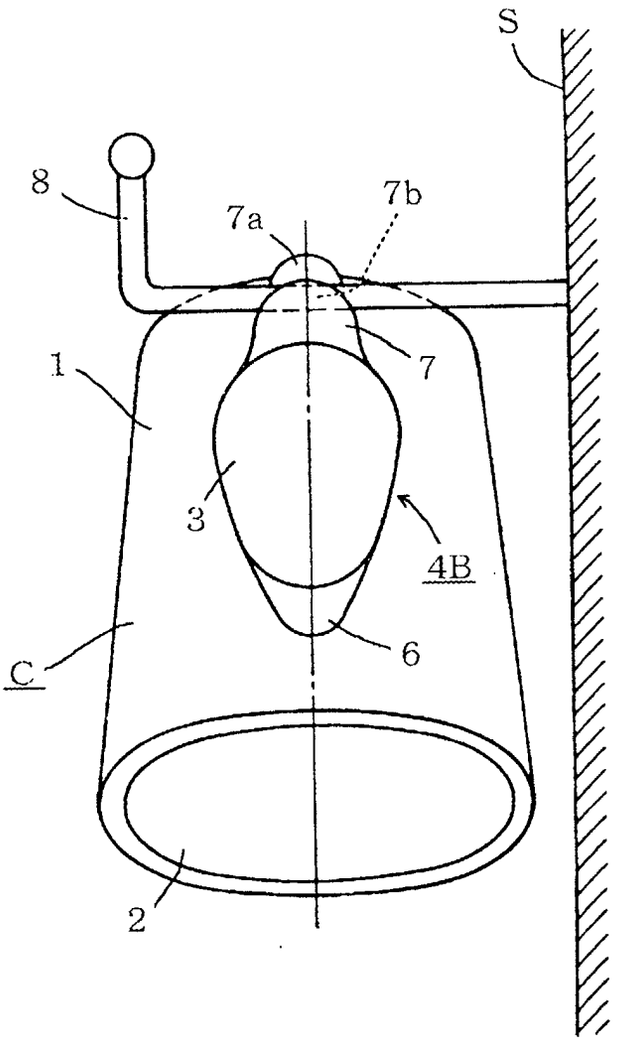


FIG. 9

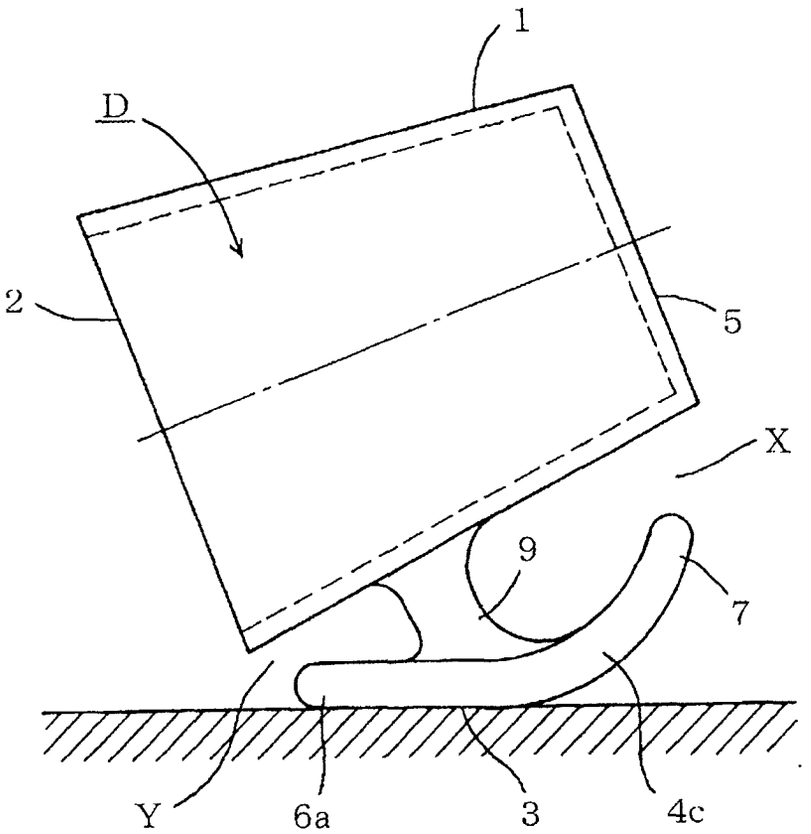


FIG. 10

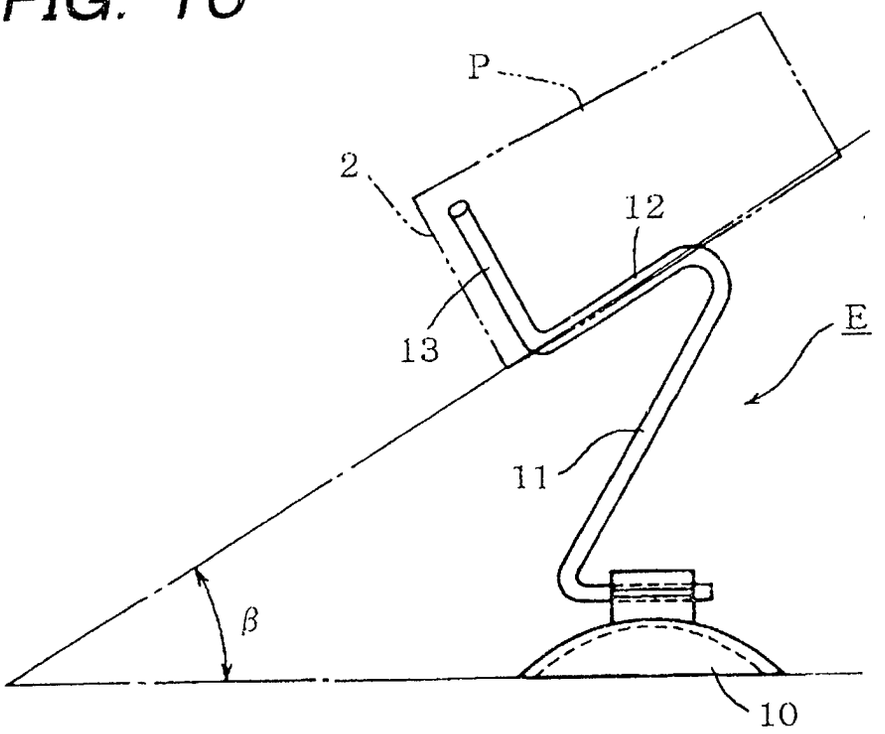
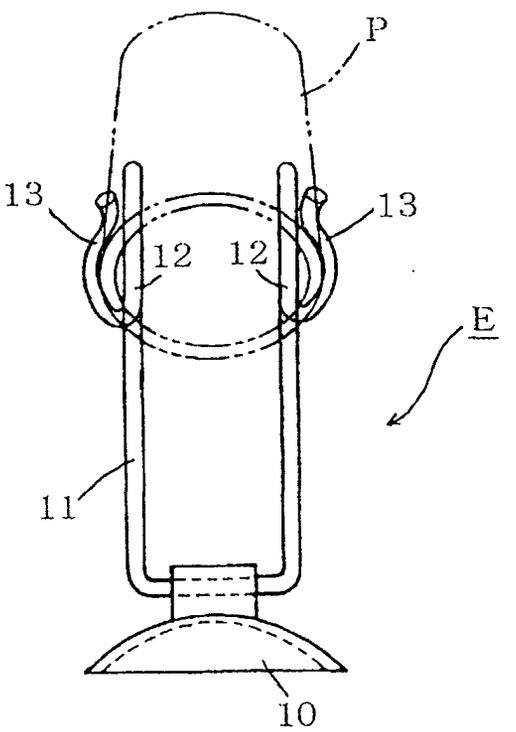


FIG. 11



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP99/04747

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl[6] A47G 19/22 A47G23/02

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)
Int.Cl[6] A47G 19/22 A47G23/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1926-1997 Toroku Jitsuyo Shinan Koho 1994-1998
Kokai Jitsuyo Shinan Koho 1971-1998 Jitsuyo Shinan Toroku Koho 1996-1999

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP, 60-84524, U (Yasuhiko SATOU), 11 June, 1985 (11.06.85) (Family: none)	1-6
A	JP, 1-177980, U (Akira KITAZAKI), 20 December, 1989 (20.12.89) (Family: none)	1-6
A	JP, 62-136867, U (Seizo NISHIYAMA), 28 August, 1987 (28.08.87) (Family: none)	1-6

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 November, 1999 (30.11.99)	21 December, 1999 (21.12.99)
Name and mailing address of the ISA/ Japanese Patent Office Facsimile No.	Authorized officer Telephone No.

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