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(56) Documents Cited:
GB 2373019 A **GB 2342382 A**
FR 002731053 A **US 2968460 A**

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(58) Field of Search:
UK CL (Edition X) **E2A**
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(54) Abstract Title: **Suction cup device**

(57) Suction cup device includes an attachment member 100 having a side having a central portion formed with a protruding fixing tube 101 having an inside formed with a threaded recess 102, and a rotation cap 300 rotatably mounted on the attachment member and having a first side having a central portion formed with a protruding threaded post 303 screwed into the threaded recess 102 of the fixing tube of the attachment member.

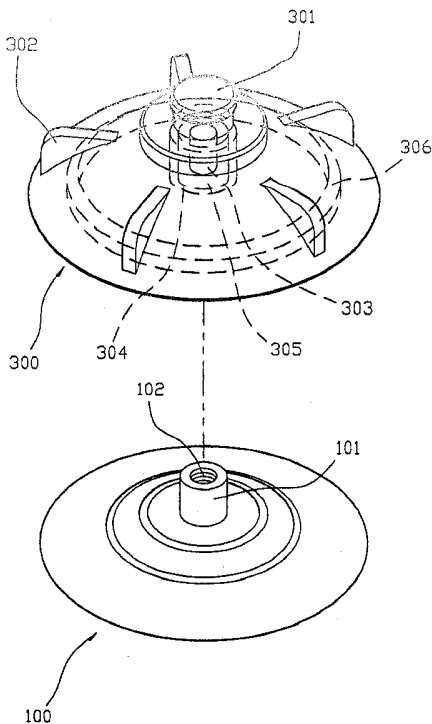


FIG. 2

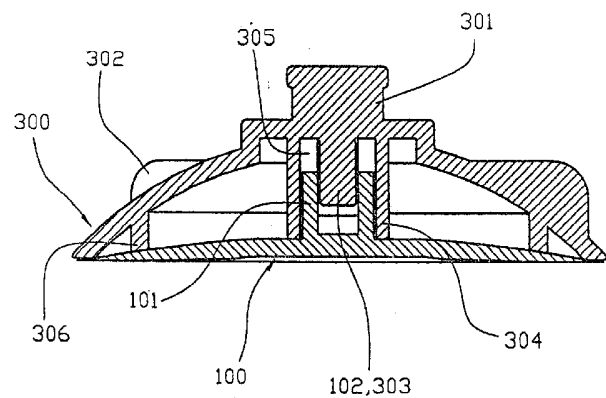


FIG. 3

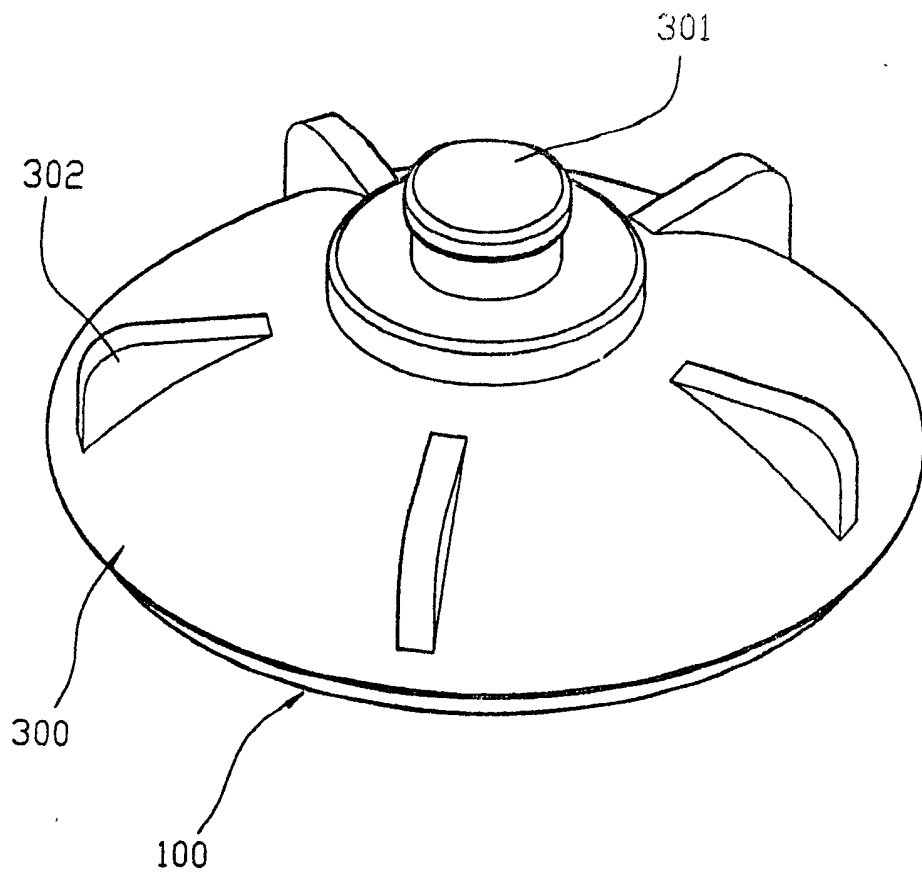


FIG. 1

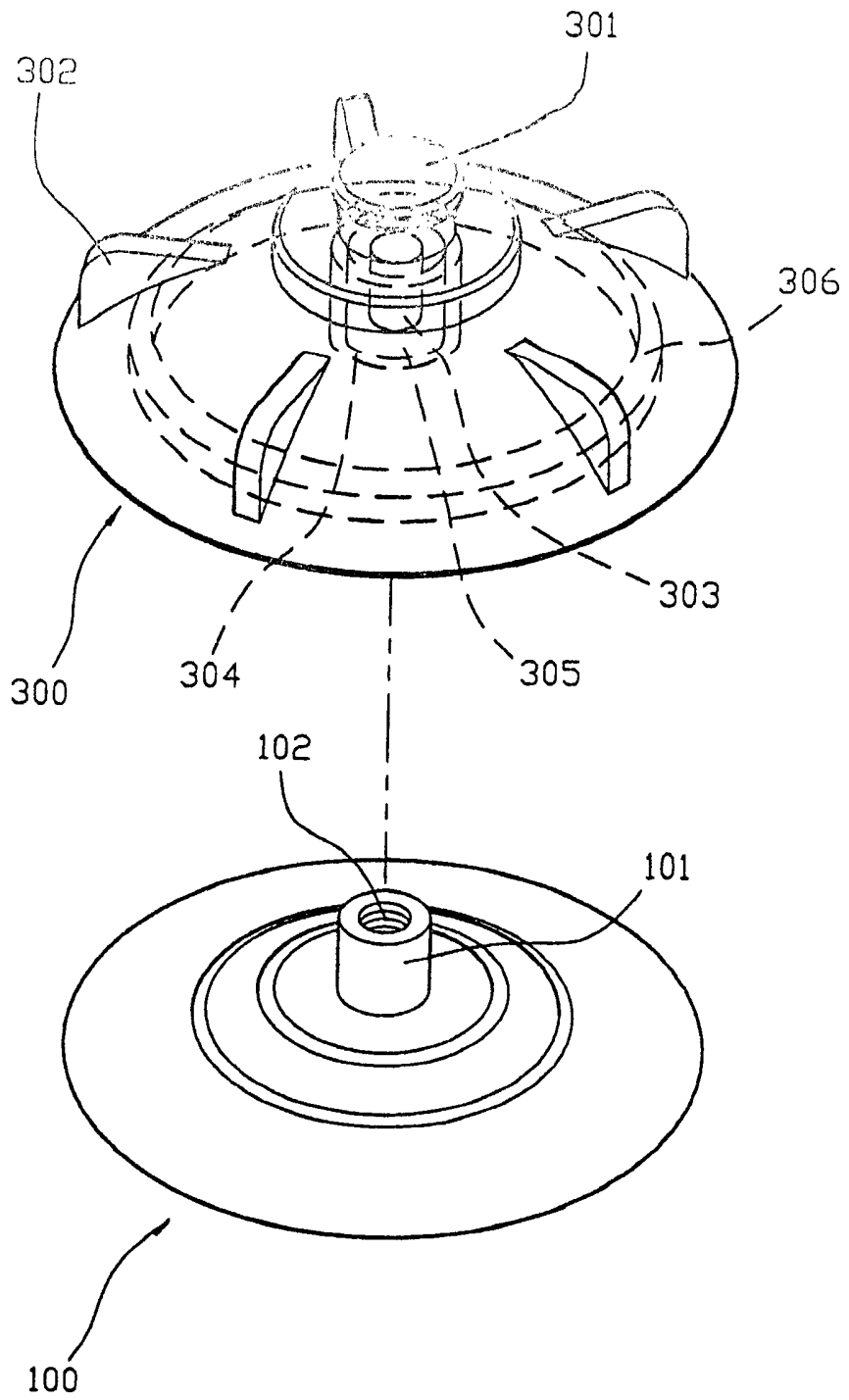


FIG. 2

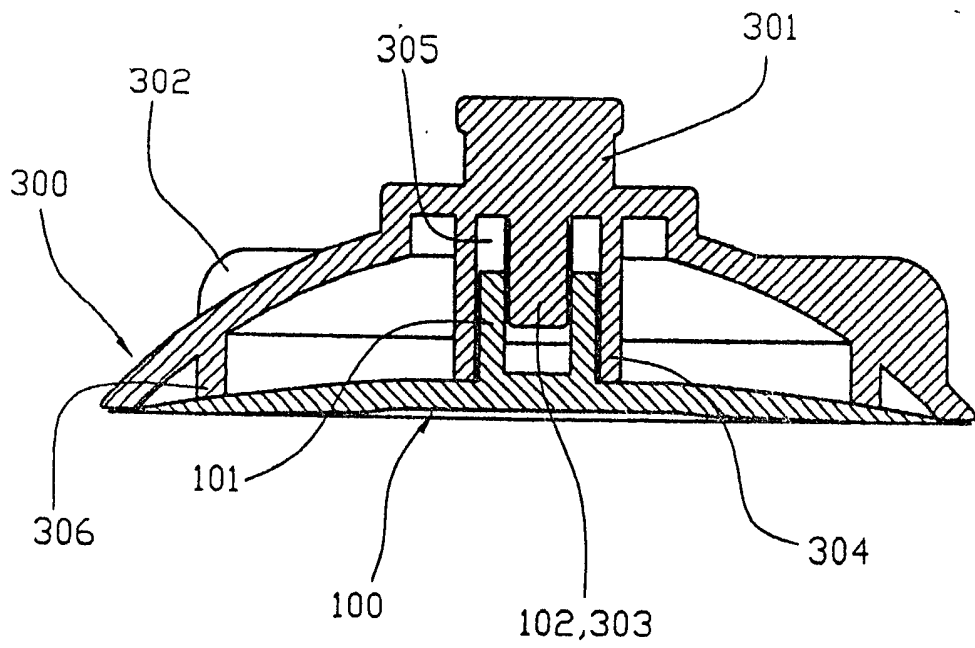


FIG. 3

SUCKER HAVING ENHANCED SUCTION FORCE**BACKGROUND OF THE INVENTION****1. Field of the Invention**

The present invention relates to a sucker, and more particularly to a
5 sucker having an enhanced suction force.

2. Description of the Related Art

A conventional sucker is bonded on the surface of an object, such as
the wall or the like, by a vacuum suction force so as to attach an article, such as
a rack or the like, on the surface of the wall. However, the conventional sucker
10 is not attached on the surface of the wall closely by its vacuum suction force, so
that the conventional sucker is easily detached from the surface of the wall
during a long-term utilization, thereby causing inconvenience to a user.

The closest prior art of which the applicant is aware was disclosed in
U.S. Patent No. 6,478,271-B1.

SUMMARY OF THE INVENTION

15 In accordance with the present invention, there is provided a sucker,
comprising:

an attachment member having a side having a central portion formed
with a protruding fixing tube having an inside formed with a threaded recess;

20 and

a rotation cap rotatably mounted on the attachment member and
having a first side having a central portion formed with a protruding threaded

post screwed into the threaded recess of the fixing tube of the attachment member.

The primary objective of the present invention is to provide a sucker having an enhanced suction force.

5 Another objective of the present invention is to provide a sucker having a simplified construction.

A further objective of the present invention is to provide a sucker that is not easily worn out during a long-term utilization.

10 Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a sucker in accordance with the preferred embodiment of the present invention;

15 Fig. 2 is an exploded perspective view of the sucker as shown in Fig. 1; and

Fig. 3 is a plan cross-sectional view of the sucker as shown in Fig. 1.

DETAILED DESCRIPTION OF THE INVENTION

Referring to Figs. 1-3, a sucker in accordance with the preferred
20 embodiment of the present invention comprises an attachment member 100 having a side having a central portion formed with a protruding fixing tube 101 having an inside formed with a threaded recess 102, and a rotation cap 300

rotatably mounted on the attachment member 100 and having a first side having a central portion formed with a protruding threaded post 303 screwed into the threaded recess 102 of the fixing tube 101 of the attachment member 100.

5 The first side of the rotation cap 300 is formed with an annular inner urging portion 304 enclosed around the fixing tube 101 of the attachment member 100 and urged on an inner rim of the attachment member 100.

 Preferably, the threaded post 303 of the rotation cap 300 is located in the inner urging portion 304 and has a length smaller than that of the inner
10 urging portion 304. In addition, a space 305 is defined between the threaded post 303 and the inner urging portion 304 of the rotation cap 300 to receive the fixing tube 101 of the attachment member 100.

 The first side of the rotation cap 300 has a periphery formed with an annular outer urging portion 306 urged on an outer rim of the attachment
15 member 100.

 The rotation cap 300 has a second side having a central portion formed with a protruding hanging portion 301 and a periphery formed with a plurality of holding portions 302 to facilitate a user holding the rotation cap
300.

20 When in use, the attachment member 100 is initially attached on a surface of an object (not shown). Then, the rotation cap 300 is rotated relative to the attachment member 100 to screw the threaded post 303 of the rotation

cap 300 into the threaded recess 102 of the fixing tube 101 of the attachment member 100, so that the inner urging portion 304 of the rotation cap 300 is rested on the inner rim of the attachment member 100, and the outer urging portion 306 of the rotation cap 300 is rested on the outer rim of the attachment member 100.

In such a manner, when the threaded post 303 of the rotation cap 300 is successively screwed into the threaded recess 102 of the fixing tube 101 of the attachment member 100, the outer urging portion 306 of the rotation cap 300 is urged on the outer rim of the attachment member 100, the fixing tube 101 of the attachment member 100 is pulled upward by the threaded post 303 of the rotation cap 300, and the inner urging portion 304 of the rotation cap 300 is urged on the inner rim of the attachment member 100 so as to produce a stronger suction force, so that the attachment member 100 is fixed on the surface of the object rigidly and stably.

Accordingly, when the threaded post 303 of the rotation cap 300 is successively screwed into the threaded recess 102 of the fixing tube 101 of the attachment member 100, the outer urging portion 306 of the rotation cap 300 is urged on the outer rim of the attachment member 100, the fixing tube 101 of the attachment member 100 is pulled upward by the threaded post 303 of the rotation cap 300, and the inner urging portion 304 of the rotation cap 300 is urged on the inner rim of the attachment member 100 so as to produce a stronger suction force, so that the attachment member 100 is fixed on the

surface of the object rigidly and stably. In addition, the sucker consists of the attachment member 100 and the rotation cap 300, so that the sucker has a simplified construction, thereby decreasing costs of fabrication. Further, the attachment member 100 is combined with the rotation cap 300 closely, so that
5 the sucker is not easily worn out during a long-term utilization.

Although the invention has been explained in relation to its preferred embodiment(s) as mentioned above, it is to be understood that many other possible modifications and variations can be made without departing from the scope of the present invention. It is, therefore, contemplated that the appended
10 claim or claims will cover such modifications and variations that fall within the true scope of the invention.

WHAT IS CLAIMED IS:

1. A sucker, comprising:

an attachment member having a side having a central portion formed with a protruding fixing tube having an inside formed with a threaded recess;

5 and

a rotation cap rotatably mounted on the attachment member and having a first side having a central portion formed with a protruding threaded post screwed into the threaded recess of the fixing tube of the attachment member.

10 2. The sucker in accordance with claim 1, wherein the first side of the rotation cap is formed with an annular inner urging portion enclosed around the fixing tube of the attachment member and urged on an inner rim of the attachment member.

15 3. The sucker in accordance with claim 1, wherein the threaded post of the rotation cap is located in the inner urging portion.

4. The sucker in accordance with claim 1, wherein the threaded post of the rotation cap has a length smaller than that of the inner urging portion.

20 5. The sucker in accordance with claim 1, wherein the rotation cap has a space defined between the threaded post and the inner urging portion to receive the fixing tube of the attachment member.

6. The sucker in accordance with claim 1, wherein the first side of the rotation cap has a periphery formed with an annular outer urging portion urged on an outer rim of the attachment member.

7. The sucker in accordance with claim 1, wherein the rotation cap
5 has a second side having a central portion formed with a protruding hanging portion.

8. The sucker in accordance with claim 1, wherein the rotation cap has a second side having a periphery formed with a plurality of holding portions to facilitate a user holding the rotation cap.

10 9. A sucker substantially as hereinbefore described with reference to and as shown in the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB0512686.7
Claims searched: 1-8

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Examiner: Philip Silvie
Date of search: 14 July 2005

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X,Y	X:1-3,5,6; Y:7,8	GB 2342382 A (YIP) see figs. 2,3
X,Y	X: 1,6; Y: 7,8	US 2968460 A (VAN DUSEN) see fig. 1
X	1	FR 002731053 A (CHARPIN) see fig. 1 and WPI Abstract Accession No. 1996-412834[01]
Y	7,8	GB 2373019 A (CROYDEX) see figs. 1-3

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

E2A

Worldwide search of patent documents classified in the following areas of the IPC⁰⁷

F16B

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC, TXTE