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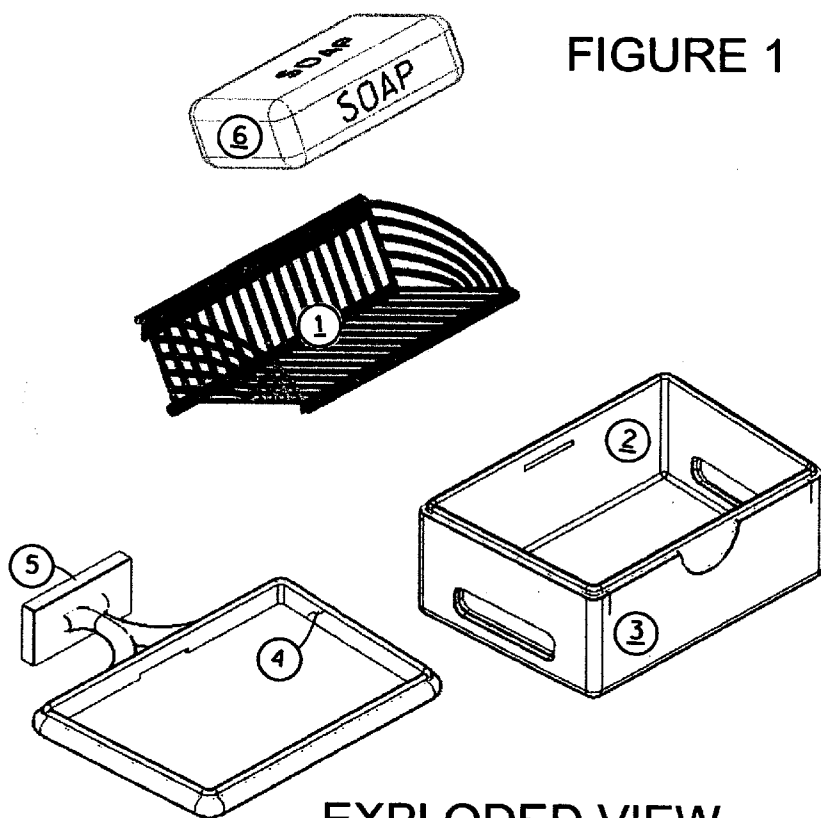


FIGURE 1

(57) Abstract: This design was made with the frequent traveler in mind who would like to use his or her favorite soap during traveling. The unique design of the soap rack and its rack-bars keep the bar soap significantly dry and minimizes the wastage of soap. The special design of the soapbox keeps the drained water away from the bar soap. After its use, the soap rack along with the bar soap can be conveniently stored in a compact, watertight box without the worry of spoiling the surroundings with soapy water. At home the same soap rack can be placed (and locked) over the permanent bracket for continuous use as a wall soap dish. The features of this design lets one pack and unpack the used bar soap without directly touching the soap.

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WALL SOAP DISH / SOAPBOX COMBO

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DESCRIPTION

5 The essential part of this invention is the soap rack, which can be locked into position either on to a permanent wall bracket or on a specially designed open soapbox.

The wall bracket has a lip resembling the rim of the open soapbox. The interior face of the bracket is designed to be identical to the top portion of the bottom dish of the soapbox so that it can receive and lock the soap rack within the bracket. This bracket may be fastened to the wall by any proven fastening system.

10 The soapbox is comprised of the bottom dish and the top cover. When the soapbox is opened for use, the inverted top cover could be placed under the bottom dish to form a compact open soapbox.

The above-mentioned four components: the soap rack, the wall bracket, bottom dish of the soapbox and top cover of the soapbox, may be manufactured from metal, plastic or any other material. The essential requirement is to maintain the shape and design of the components as shown on the drawings. The inventor developed this design for standard soap bars available on the market today, but could easily be modified to suit the available soaps or any other wet objects to be drained and dried.

20 The rack-bars of the Soapbox must be semi-circular in cross-section with the flat surface touching the bar soap or any other wet object to be drained efficiently. The diameter of the semi-circular rack-bars and the rack-bar spacing may be varied depending on the requirements.

All the rack bars are designed to be longitudinally sloped during the use of the soap rack. The slope of the bottom supporting rack bars shown on these drawings is approximately 27 degrees but could be modified to any other slope in order to drain efficiently. The inventor selected this angle so that the soap rack can be conveniently stored in the soapbox after use for storage.

The other essential requirement of this design is to provide the overflow opening at least few millimeters (mm) below the bottom of the main supporting member of the soap rack so that an accidental overfill will not reach the soap. The top cover has an opening that lines up with the bottom dish overflow opening when the inverted top
5 cover is placed under the bottom dish during use.

The sloped rack-bars are made slick with highly polished surfaces. If required, any State-of-the-Art procedure may be employed to make the rack-bars non-stick.

OBJECT OF THE INVENTION

The object of this invention is to provide a simple but effective design to drain
10 and dry wet objects especially wet bar soaps. Although the inventor developed the design of the soap supporting rack for the soapbox, the drain rack design may be effectively used to drain and dry any other wet objects.

BACKGROUND OF THE INVENTION

Ever since the discovery of bar soap, inventors have been trying to develop a
15 soapbox that can drain, dry and store soap without any wastage. Traditionally, soapboxes are designed to have short ribs, raised ridges, dowels, grills or racks to support the wet bar soaps above the floor of the soapbox or soap-dish.

In almost all the cases, the bars which support the bar soaps are flat, rectangular
20 or circular in cross-section and they are not efficient in draining the water away from the wet soap surface. Water adheres to the bottom surface of the soap between the bars and slowly soaks the outer layer of the soap surface.

Most of the conventional soapboxes are designed to support the bar soaps in
horizontal position and due to the lack of any slope, water stagnates over the soap. The water thus retained on the top surface slowly soaks the surface of the soap. When the
25 top surface of the soap is soaked, a thin film of soapy paste will be formed which in turn will retain more water and dissolve the soap further.

Some previous designs employed the concept of inclined supporting members to support the wet bar soaps, but these supporting members are not adequate to restrain the

soap from touching the floor of the soap dish. When the soap touches any part of the soap dish, the water will be trapped between the surfaces and the soap starts absorbing the water and starts to dissolve. Furthermore, these designs were developed for the soap dishes to be supported on the walls or showerheads with an elaborate system and are not
5 adaptable for the compact boxes. The inventor of the present design did not find any patents that utilize the inclined supporting structure for the compact soapboxes.

In most soapbox designs, the space between the wet soap and the floor of the container is not designed to adequately drain the soapy water collected from the soap. Some of the containers are provided with small holes or narrow slots but they are not
10 effective especially when the inverted top cover is placed under the bottom dish. Additionally, these holes or slots allow the soapy water to escape from the box and create a mess during storage. Apart from this, a large surface area of the soap touches the bottom of the perforated container and water will thus be trapped between soap and the box bottom. When the wet bar soap touches any other surface, water will be
15 retained between the surface and the soap. This retained water will be absorbed by the soap to form a soft paste.

Most soapboxes are not designed to tolerate any accidental overflow and when the shower water fills the box, water will submerge the soap and destroy the soap.

SUMMARY OF INVENTION

20 The present invention, which will be described in detail with the help of drawings, rectifies all the above-mentioned shortcomings of conventional soap dishes and soapboxes.

The inventor invented the use of semi-circular bars to support wet bar soaps. The flat surface of the bar contacts the wet soap with the curved surface away from the
25 soap. Due to surface tension, the thin film of soapy water sticking to the soap bottom between the bars is drawn towards the bars as soon as the bar soap is placed on the rack. The soapy water thus drawn towards the bars will be quickly and efficiently drained, without giving it chance to soak the soap.

The inventor designed the soap rack to keep the soap surfaces inclined so that the water drains quickly and efficiently due to gravity and will not have enough time to be absorbed by the soap.

In spite of the two design features mentioned above, a certain amount of water will still be trapped between the soap and the flat surface of the rack-bars and be absorbed by the soap to make a thin film of soapy paste. This film will eventually dry up and return to the soap since it cannot adhere to the slick, non-stick surface of the rack-bar.

The bottom dish and its top cover of the soapbox are designed to make sure that the drained water in the bottom dish cannot reach the soap rack to damage the soap. Even during storage, the soap rack and specially designed raised ridges of the soapbox separates the soap and the wet container and minimizes soap destruction.

DESCRIPTION OF THE DRAWINGS

The following brief description of the drawings is developed to familiarize the reader with the different components of the Wall Soap Dish / Soapbox Combo designed by the inventor. The drawings cover sheet presented on the first page shows all the components of the invention.

FIGURE 1 of the drawings is an exploded isometric view of the present invention. The soap rack (1) can be locked into its position over an open soapbox (2) or over a wall bracket (4). During the soapbox use, the inverted top cover (3) may be placed under the bottom dish (2) as shown. After the use, the soap rack (1) along with the bar soap (6) can conveniently be placed inside the bottom dish (2) and closed by the top cover (3). The wall bracket (4) is designed to have the top dimensions identical to the top portion of the bottom dish (2) of the soapbox. This bracket (4) is permanently fixed to the wall by any proven fastening system (5).

FIGURE 2 is the Plan View of the open Soapbox (2&3) with the soap rack (1) locked into position. The soap rack (1) is made up of front supporting member (9), back supporting member (7), main cross-member (8) and several rack-bars (10, 11 and 12) all of which are fused together to form this rack (1). As shown, this soap-rack fits between two longer walls of the bottom dish (2). The bottom supporting rack-bars (10) span across the front supporting member (9) and the main cross-member (8). In the same way, the back supporting rack-bars (11) span across the back supporting member (7) and the main cross-member (8). Notice that the soap-rack is not supported on the shorter walls of the box. The side rack-bars (12) span across the outermost bottom supporting rack-bars (10) and the outermost back supporting rack-bars (11). These side rack-bars (12) follow an elliptical path between the supporting rack-bars as shown in FIGURE 4. Specially designed locking tab (13) will make sure that the soap rack will maintain its place whether it is placed on the open soapbox or the wall bracket. Lifting the soap rack straight up with this tab (13) will release the lock and removes the soap rack without any resistance.

FIGURE 3 is the cross-sectional view of Section – XX as indicated on FIGURE 2. This Figure also shows the DETAIL of the rack-bar cross-section, which is semi-circular. This cross-section is the typical transverse section of all the rack-bars (10,11 and 12) and is taken perpendicular to the axis of the bars. Notice that the overflow openings (15) of the inverted top cover (3) will line up with the overflow openings (14) of the bottom dish (2) and these openings will prevent the drained water from reaching the soap rack (1).

FIGURE 4 is the cross-sectional view of Section-YY as indicated in FIGURE 2. As shown in this figure, the soap rack (1) is supported on the bottom dish (2) during use. Notice that the triangular projection (16) of the locking tab (13) will snap into the depressed section of the bottom dish (2) and locks the soap rack in position. When the tab is lifted up, the lock will disengage and the rack can be removed without any resistance. The bottom supporting rack-bars (10), span across the front supporting member (9) and the main cross-member (8). The back supporting rack-bars (11) span across the back supporting member and the

main cross-member (8). The detailed layout of the side rack-bars (12) can be seen clearly here. The side semi-circular bars follow an elliptical shaped path between the end back support rack bars and the end bottom supporting rack bars. The overflow openings (14 & 15) are provided to drain off any excess water from the bottom dish (2) and prevents water from reaching the cross member (8).

FIGURE 5 shows two cross sectional views of the soapbox during and after use. This figure shows the general arrangement of the soap-rack (1), bottom dish (2) and the top cover (3) of the soapbox. Notice how the overflow openings (15) of the inverted top cover (3) align with the over flow openings (14) of the bottom dish (2) during use. After use, the overflow openings will stagger to make a watertight soapbox to store the soap. Before storing the soap, any remaining water in the bottom dish should be emptied and the soap rack removed from the locked position. By lifting the soap rack straight up with the locking tab (13), the soap rack will be unlocked and can be removed and placed on the floor of the bottom dish as shown in this figure. Special features of this design will allow the used bar soap to be stored without even touching the soap. The inverted top cover (3), which was placed under the bottom dish (2) during use, should be removed and placed upright over the bottom dish to close the soapbox. Notice that the soap rack (1) along with the raised ridges (17, 18) prevents the soap from directly touching the box interior in any position of the box during traveling. The reduction in contact surface between the wet soap and the box interior will reduce the water entrapment and thus minimizes the soap wastage. By letting the soap and the box dry before closing the box, one can completely eliminate the wastage of soap.

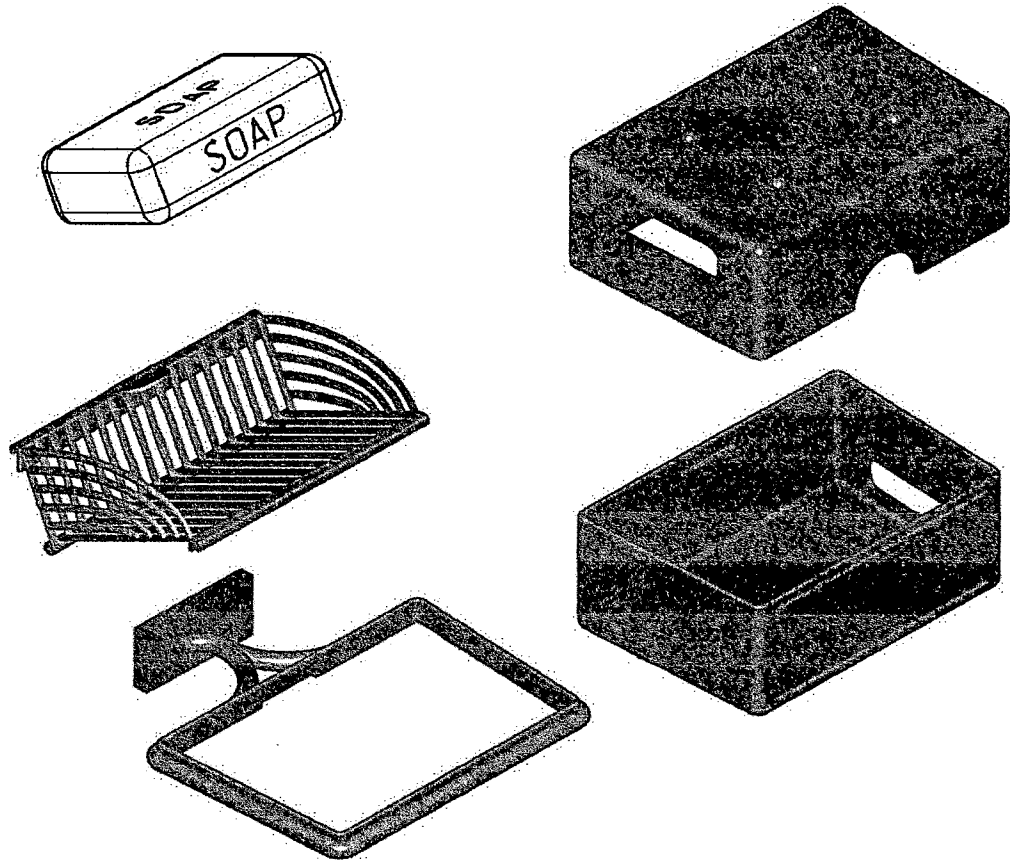
WALL SOAP DISH / SOAPBOX COMBO

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CLAIMS

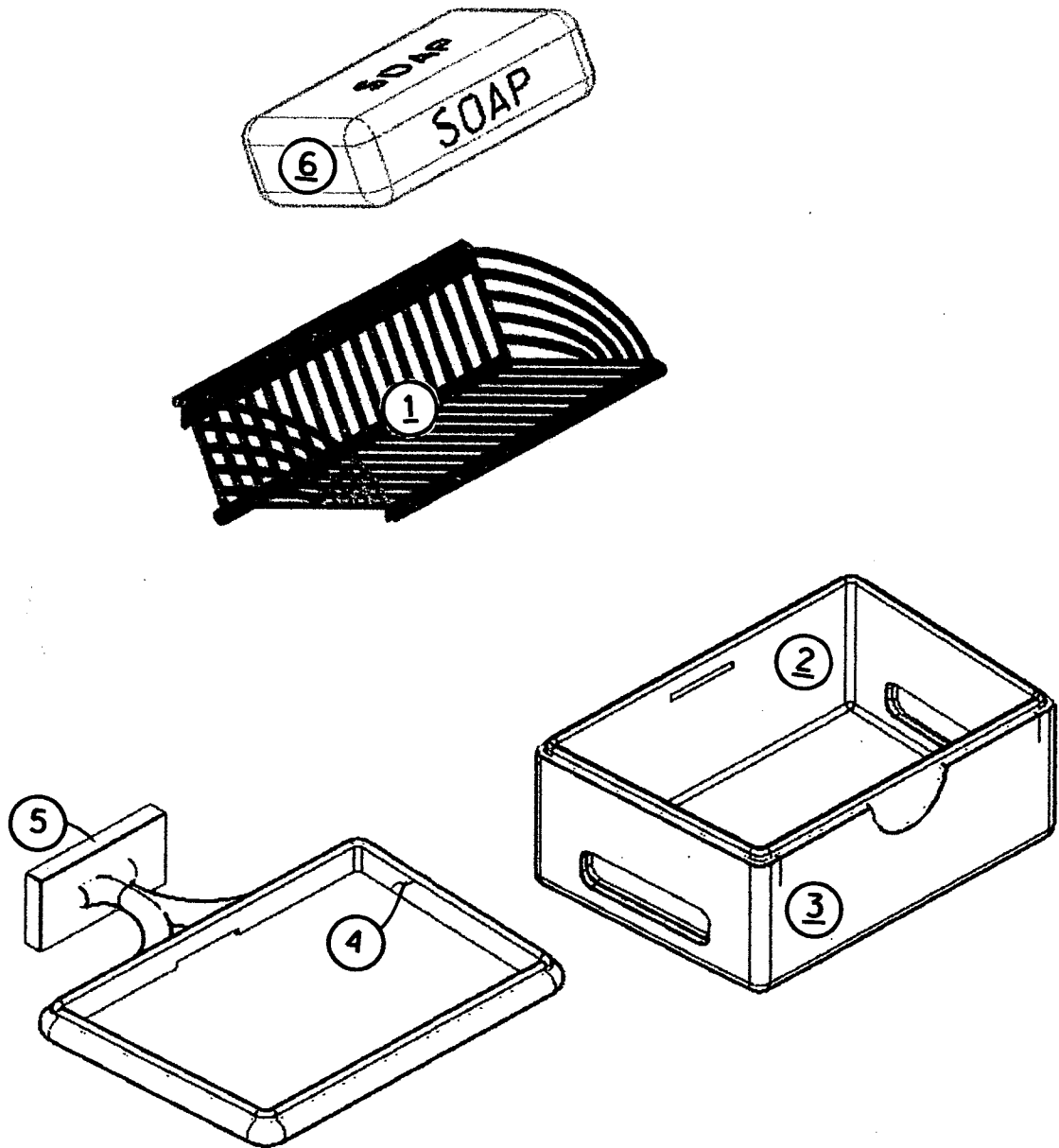
I claim that:

- 1) The unique semi-circular (half-round) rack-bars of the soap rack are capable of attracting water away from the wet bar soap bottom surface as soon as the bar soap is placed on these bars.
- 2) The specially designed soap rack keeps the entire bar soap inclined so that the water from the wet bar soap surfaces drains very quickly and efficiently without being absorbed by the soap.
- 3) The soapbox which collects the drained water from the wet bar soap is designed with overflow openings in such a manner that the water surface can never reach the soap during use. The same soapbox can be converted into a watertight box to store the soap along with the soap rack.
- 4) The specially designed locking tab locks the soap rack in position over the wall bracket or the open soapbox and easily unlocks when the tab is lifted straight up. This feature helps one to pack or unpack the used bar soap without directly touching the soap.



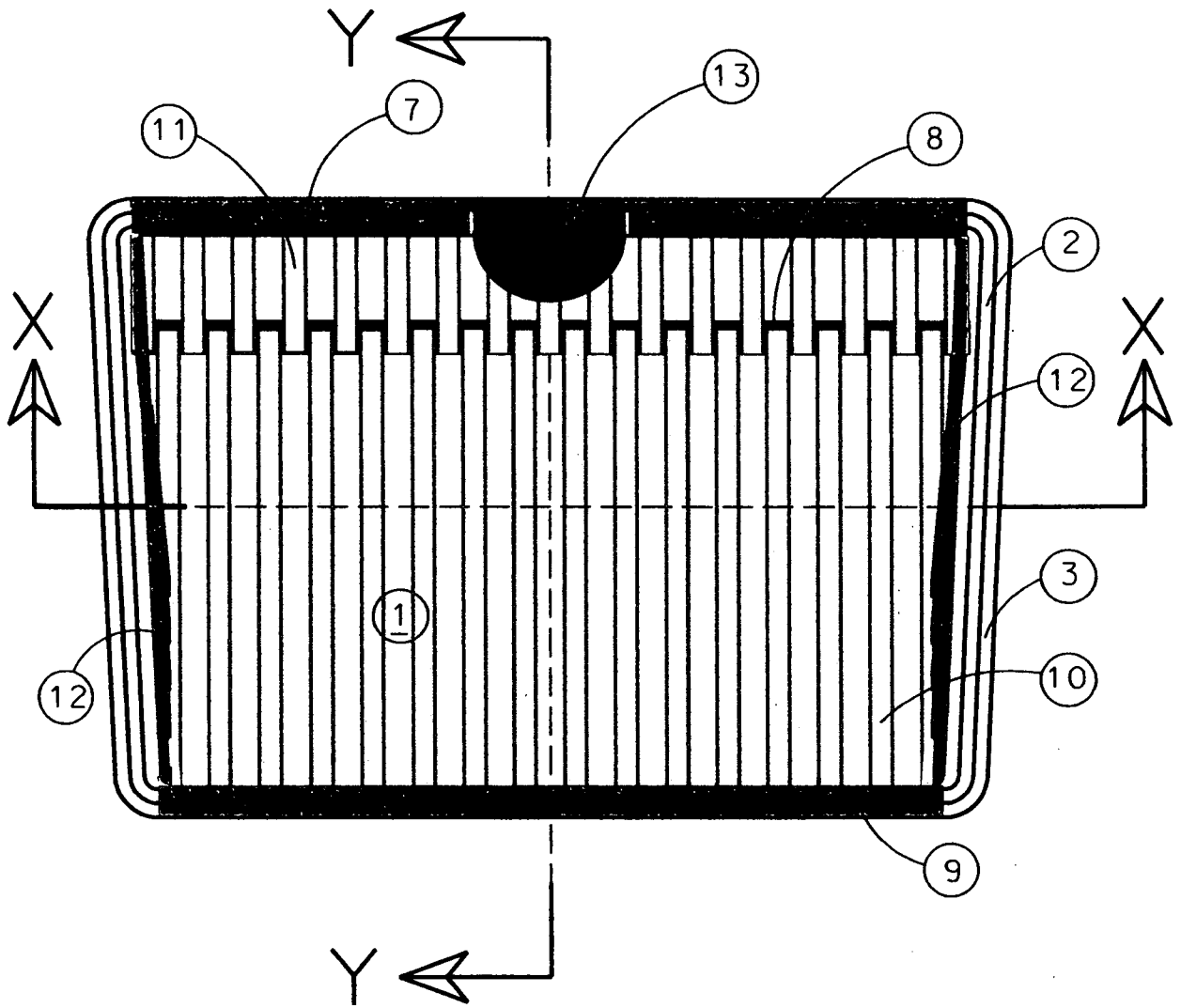
WALL SOAP DISH / SOAPBOX COMBO

INVENTOR: Suryaprasad Rao SRUNGARAM



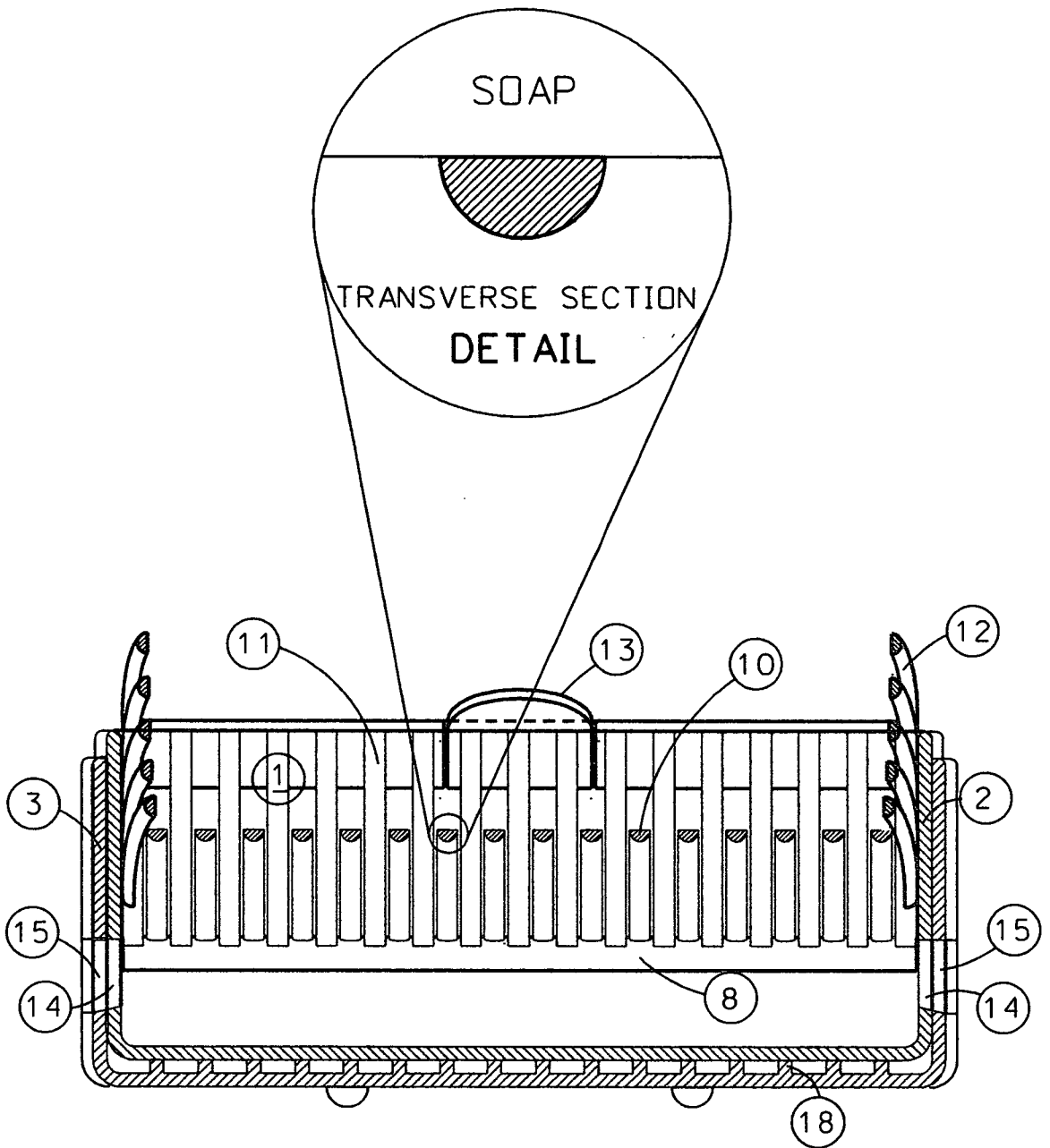
EXPLODED VIEW

FIGURE 1



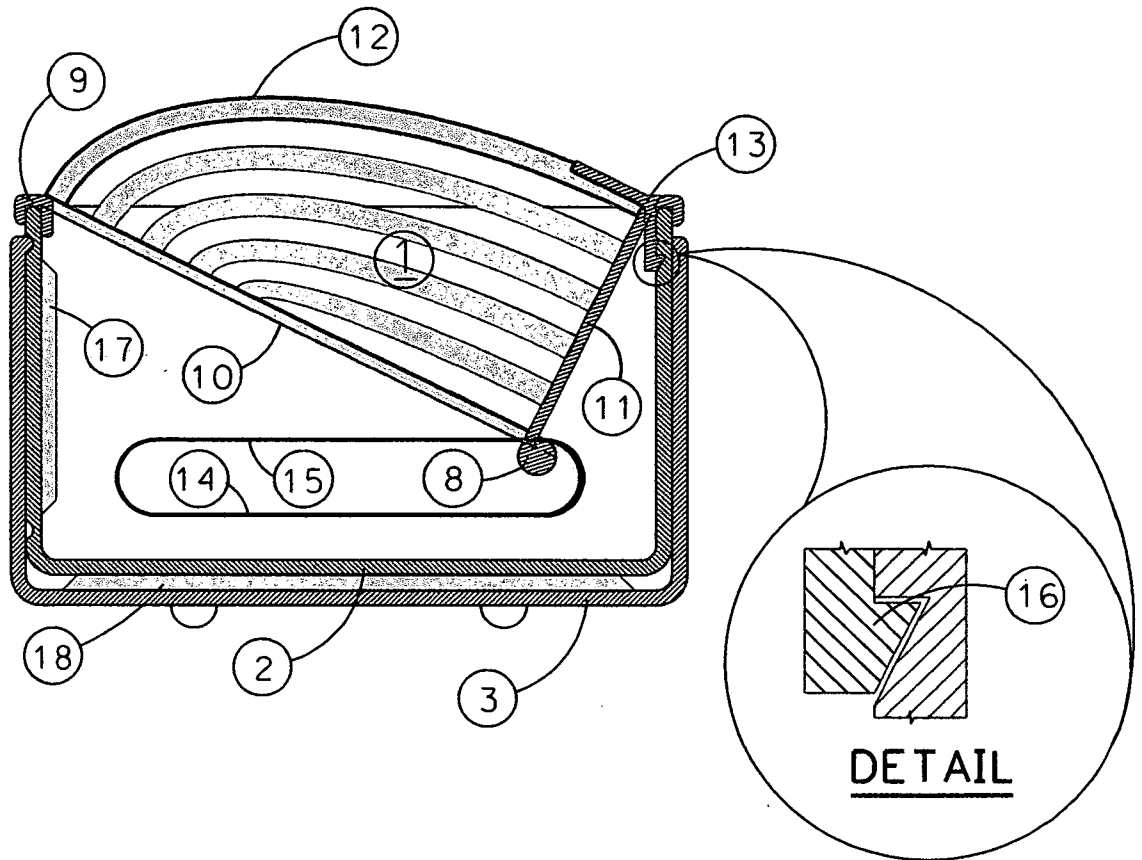
PLAN VIEW

FIGURE 2



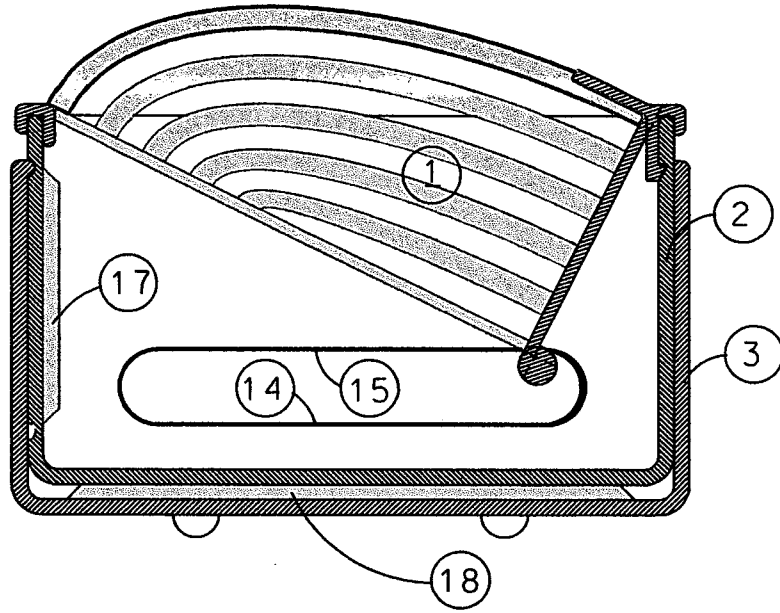
SECTION - XX

FIGURE 3

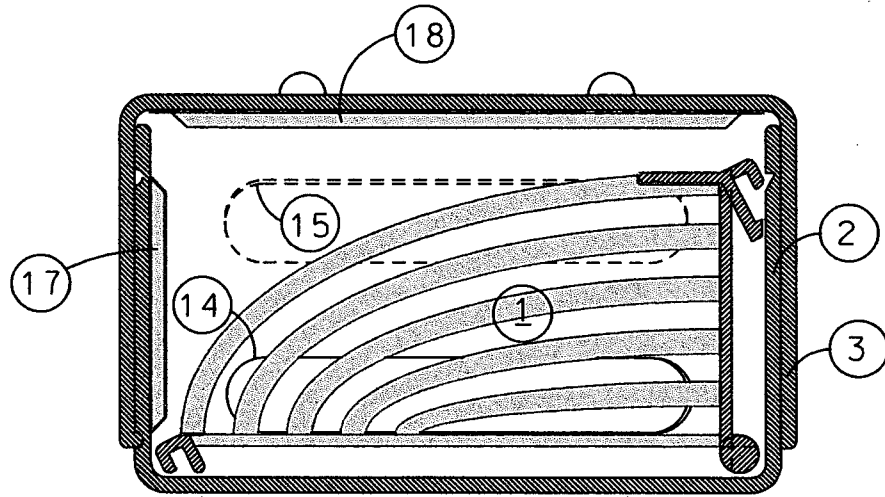


SECTION - YY

FIGURE 4



SOAP BOX DURING USE



SOAP BOX AFTER USE

FIGURE 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/14070

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - A47K 5/08 (2009.01)
 USPC - 206/77.1

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)
 USPC - 206/77.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 USPC - 206/77.1, D6/536 (keyword limited - see below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 PubWEST(PGPB,USPT,EPAB,JPAB), Google
 Search Terms Used: soap, box, container, receptacle, incline, portable, travel, watertight, overflow, drain

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 5,680,929 A (Von Seidel), 28 October 1997 (28.10.1997); col 4 ln 38 to col 5 ln 8	1-2,4 — 3
Y	US 6,152,294 A (Weinberg), 28 November 2000 (28.11.2000); col 2 ln 32-47	3
A	US D553,889 S (Egawa), 30 October 2007 (30.10.2007); entire document	1-4
A	US 2007/0056862 A1 (Jones), 15 March 2007 (15.03.2007); entire document	1-4
A	US D450,965 S (Weinberg), 27 November 2001 (27.11.2001); entire document	1-4

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774