

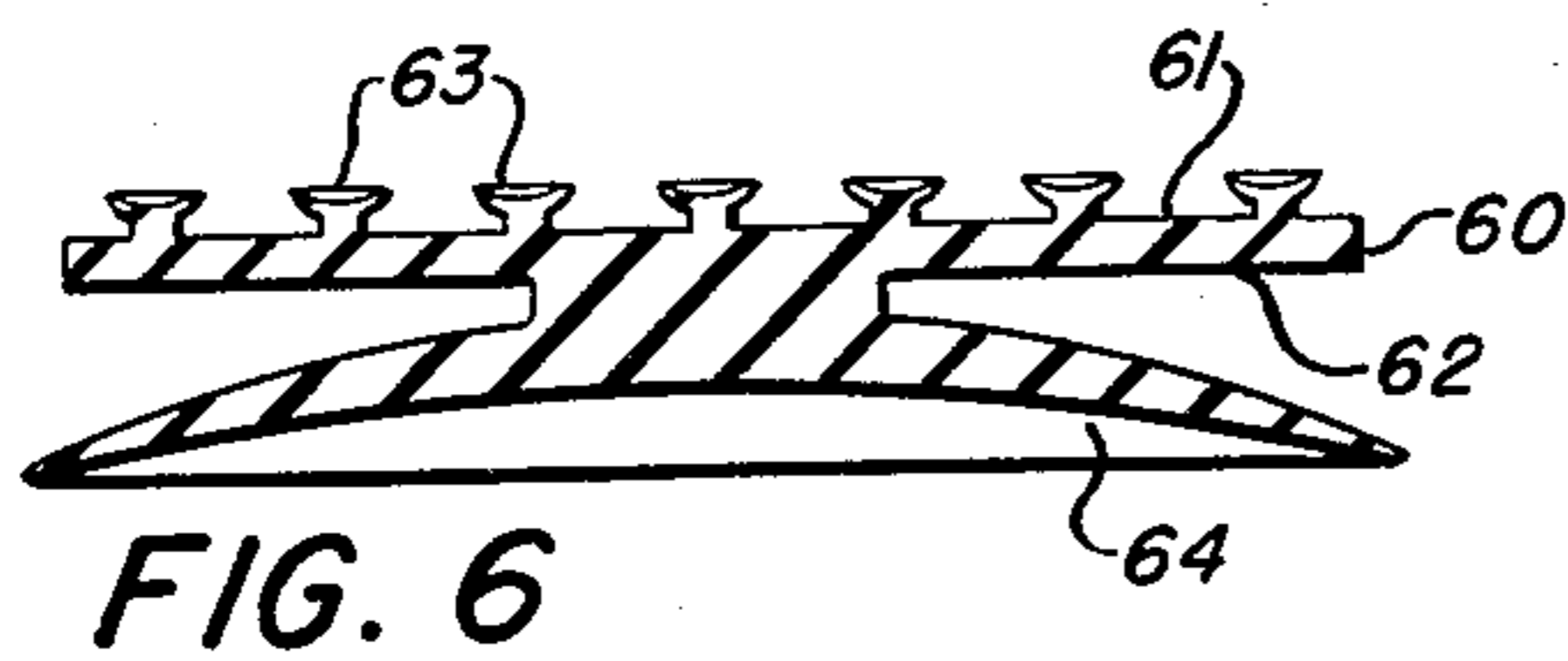
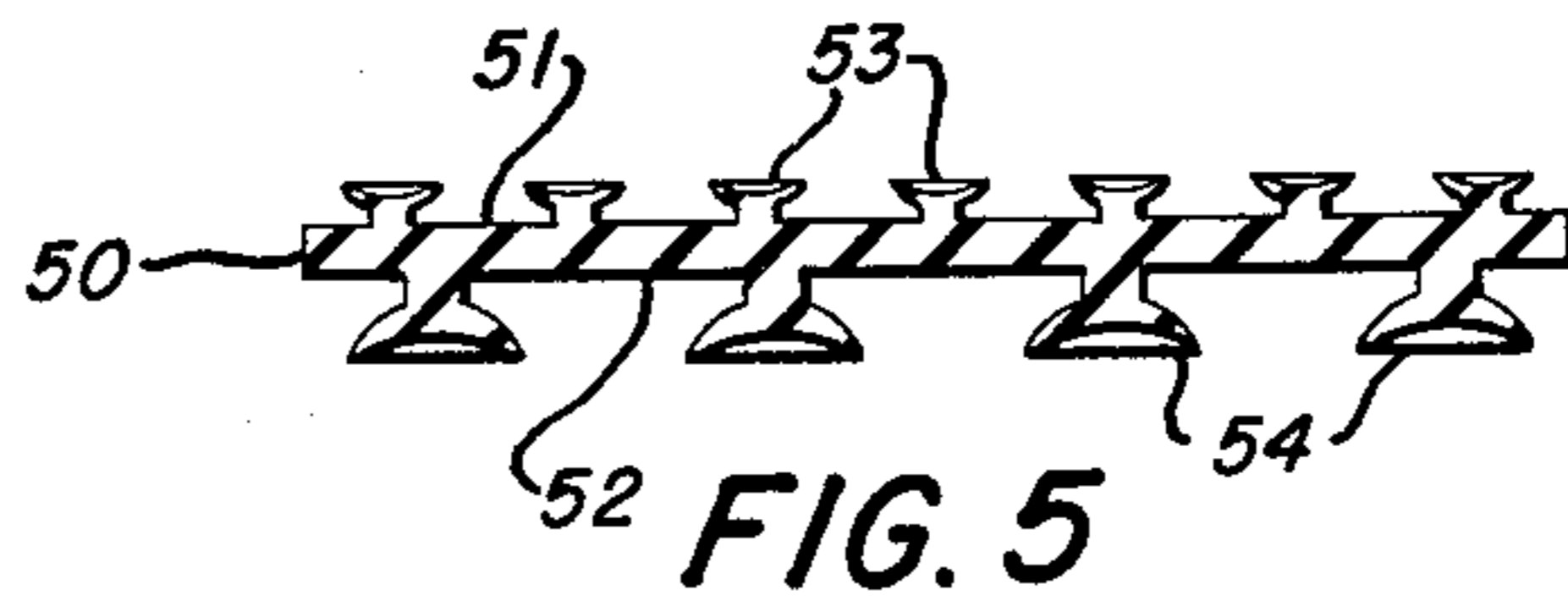
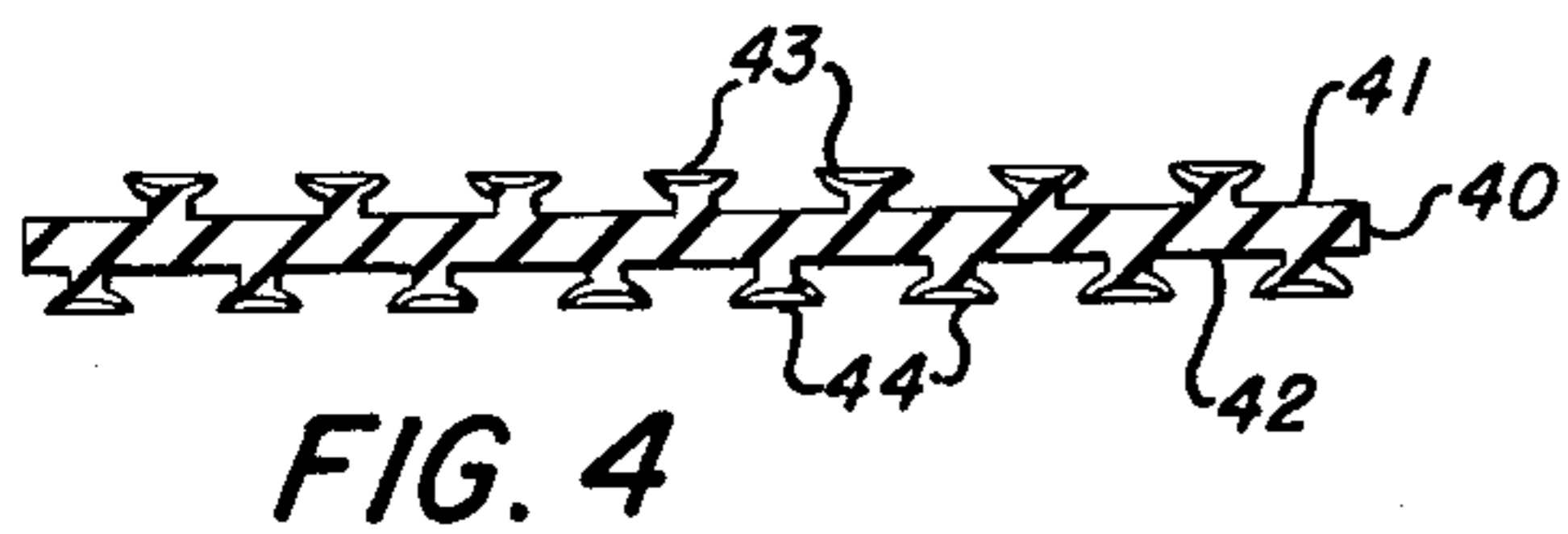
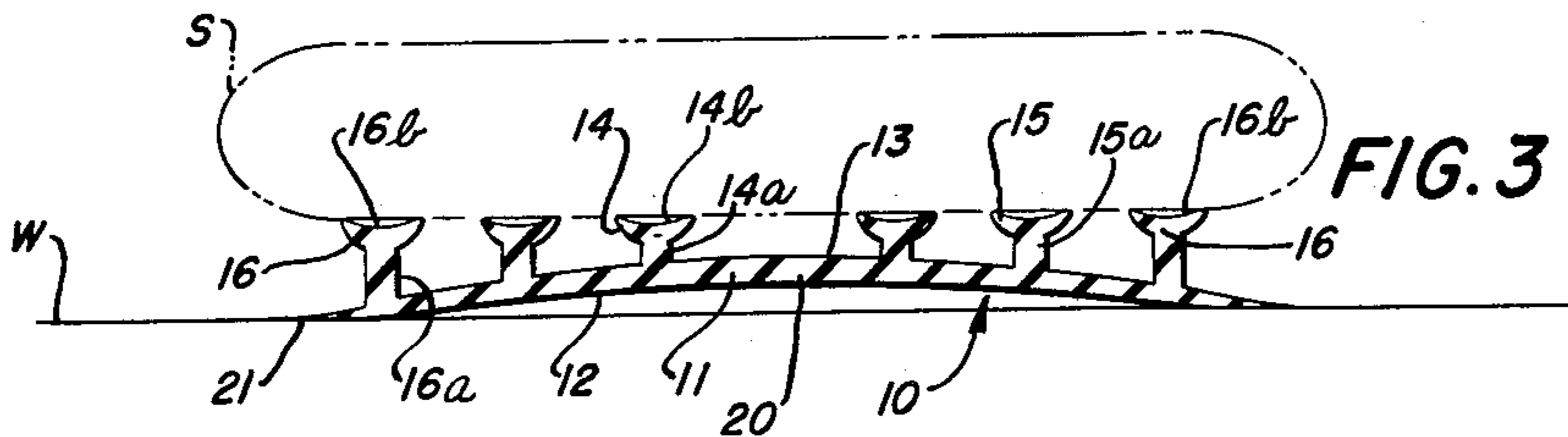
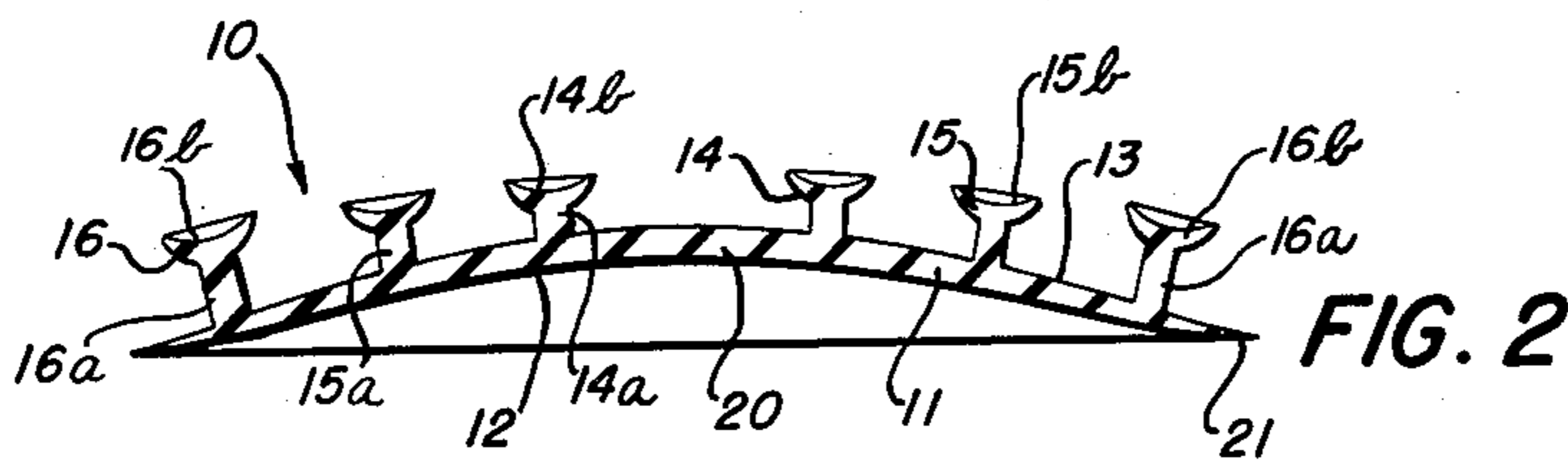
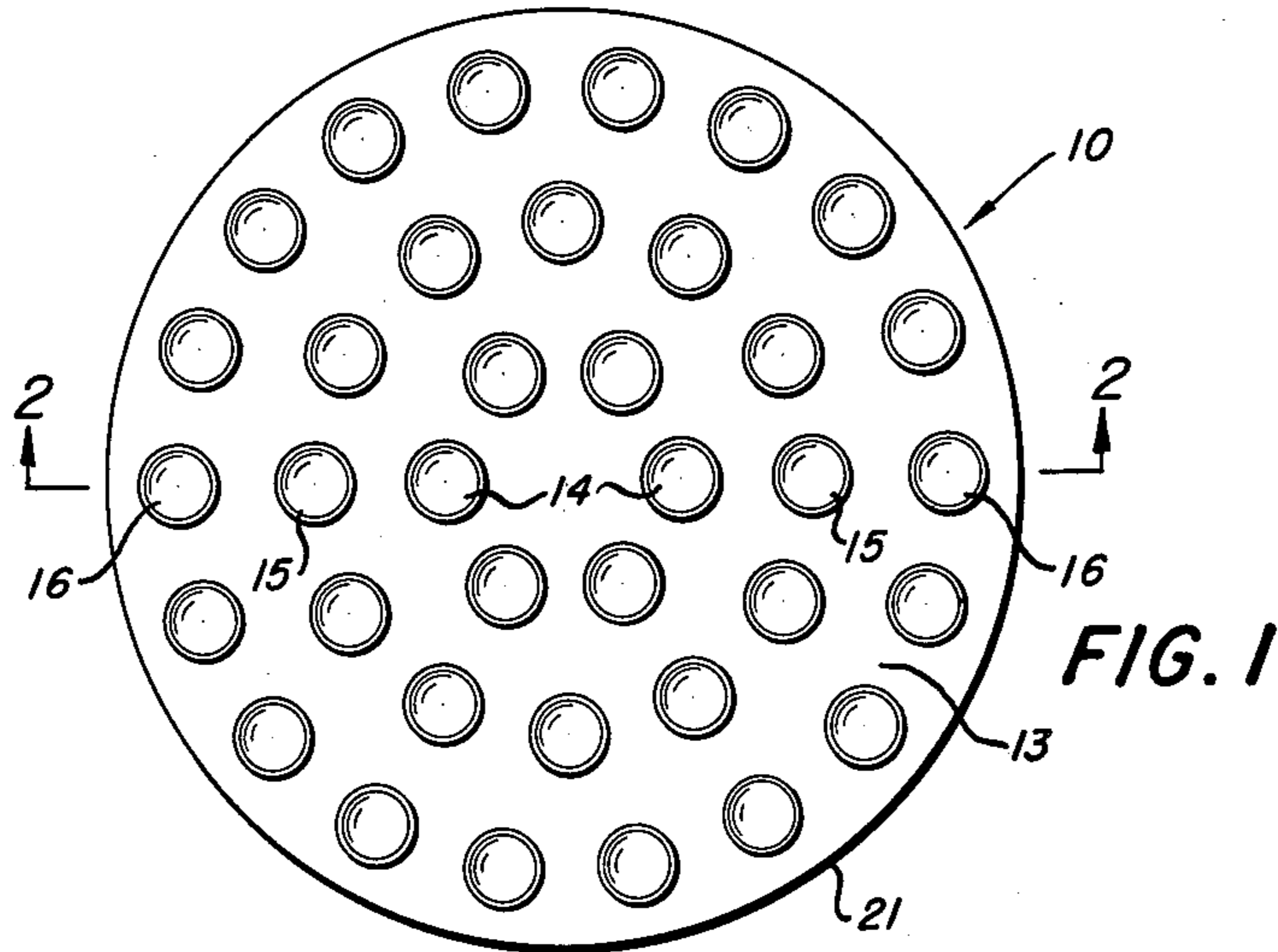
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VACUUM CUP HOLDING DEVICE

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1

3,101,566

## VACUUM CUP HOLDING DEVICE

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This invention relates to a device for supporting soap or other like objects with respect to a surface such as a shower wall or a sink basin.

In applicant's earlier Patent 2,466,502, there was disclosed a holding device that employed a plurality of vacuum cups for the purpose of supporting a soap holding device with respect to a bar of soap and a wall surface. While the device of the aforementioned patent has enjoyed wide-spread commercial success, it has been found that improved results can be obtained by providing different forms, shapes, and contours for the vacuum cup portions thereof.

Specifically, in the aforementioned patent, there was disclosed a pliable resilient sheet that had an equal number of suction cups projecting from the opposed faces thereof in opposed relationship, so that either side of the device could be used interchangeably for the purpose of either (1) supporting the soap or (2) supporting the device with respect to a wall surface.

While such structure employing an equal number of identical vacuum cups on each side has certain advantages as above noted, it is manifest that such construction does have the disadvantage of using minimal strength cups on both sides so as to have the requisite flexibility of adhering soap to either side. Stated otherwise, both sets of vacuum cups must be able, in the applicant's earlier patent, to perform the function of holding the soap with the result that minimal holding power is provided in the remaining portion used as a wall adhering portion of the device.

It has been discovered that the aforementioned defect can be obviated without material detracting of the overall product by utilizing stronger suction cups on one side than on the other side, and further limiting the use of the larger size suction cups to the function of adhering the unit to the wall, while the other side remains substantially the same as in applicant's earlier patent for the purpose of adhering the soap with respect to the device.

Production of an improved soap holding unit having the above characteristics accordingly becomes the principal object of this invention, with other objects of this invention becoming more apparent upon a reading of the following brief specification, considered and interpreted in the light of the accompanying drawings.

Of the drawings:

FIGURE 1 is a plan view of the improved soap holding device.

FIGURE 2 is a sectional view taken on the lines 2—2 of FIGURE 1 and showing the improved soap holding unit in normal or unflexed condition.

FIGURE 3 is a view similar to FIGURE 2 but showing the unit distorted as during attachment of the same to a wall surface.

FIGURES 4, 5 and 6 are sectional views similar to FIGURES 2 and 3 but being of reduced size and showing modified forms of the invention.

Referring now to the drawings and in particular to FIGURE 1 to 3 thereof, the improved soap holding device, generally designated by the numeral 10, is shown as being of unitary construction so as to include a circular sheet-like base element 11 of generally concavo-convex configuration so as to include opposed surfaces 12 and 13.

For the purpose of adhering soap to the unit 10, a plurality of suction or vacuum holding elements 14, 14,

2

15, 15 and 16, 16 are shown integrally projecting from the surface 13, as clearly shown in FIGURES 2 and 3 of the drawings. In this regard, the individual sets of cups just described are each provided with a shank portion and a cup portion, with it being noted that the shank portions 14a, 14a of the gripping elements 14, 14 are relatively short, while the shank elements 15a, 15a and 16a, 16a of the suction elements 15, 15 and 16, 16 respectively increase in length, as shown in FIGURE 2.

The arrangement just described is preferred due to the configuration of the base member 11, which has been generally described as being of concavo-convex cross section, although FIGURES 2 and 3 clearly illustrate that the base 11 preferably includes a thickened central section 20 that tapers radially outward to a thin feathered type of peripheral edge 21. In this fashion, and referring to FIGURE 2, when the unit 10 is in its normal condition, the cup portions 14b, 15b and 16b will be arranged in an arc that corresponds substantially to the cross sectional arc of the surface 13. However, when the unit is flexed to the adhering position of FIGURE 3, it will be noted that such distortion serves to move the cup elements 14b, 14b, 15b, 15b, 16b, 16b towards coplanar, or approximately coplanar relationship with each other so that a bar of soap may be efficiently supported thereon, with it being noted that the surface 12 will define the vacuum cup that serves to adhere the entire unit 10 with respect to the wall surface W, as clearly shown in FIGURE 3. It is to be understood that in the case where the base required less distortion to suctionally adhere to a wall surface, that the cups in question could have identical shanks with substantially the same result.

In use or operation of the improved device, it is merely necessary that the same be manually applied against the wall surface and flattened to the position of FIGURE 3 to form the requisite suction that will hold the unit 10 with respect to the wall surface W. Such distortion as just described will also serve to move suction elements 14, 15 and 16 into a substantially common plane, whereupon a bar of soap S may be supported thereon, as shown in dotted lines in FIGURE 3 of the drawings.

From the standpoint of material to be employed in connection with the preferred form of the invention shown in FIGURES 1 to 3, it is preferred that the unit be of one-piece construction, as indicated previously, and further that the material employed be rubber or rubbery material, including plastic, that will deform and yet perform the requisite function of adhering the unit with respect to a wall surface and a bar of soap.

The modified forms of the invention shown in FIGURES 4, 5 and 6 are directed to improvements that do not utilize a formed concavo-convex cross section base for the purpose of defining the suction cup. Thus, in these units the wall adhering surface will be defined by a second series of cups and it will be assumed that the planar configuration of the unit is circular as shown, although it is to be understood that the same could be rectangular, square or of any other shape desired.

Accordingly, and in FIGURE 4, there is provided a circular base 40 that has opposed parallel planar sides 41 and 42. A first series of cups 43, 43 project from the face 41, while a second series of cups 44 project from the face 42 for the purpose of adhering the unit with respect to the wall. In this regard, it should be noted that the cups 43, 43 and 44, 44 are of the same size so as to be equal in holding power, but it should be noted that there are a greater number of cups 44 provided so that these cups may be used to adhere the unit to the wall and thus provide greater surface adhering properties to the overall unit, with the holding power of the unit being increased because of the greater number of suction cups that will be adhering to the surface involved.

Additionally, it should be noted in FIGURE 4 that the cups are staggered with respect to their projection from the base 40, with such construction having the advantage over the construction of applicant's earlier patent in that flexure of one cup will not result in flexure of the opposed cup.

With respect to FIGURE 5, a circular base 50 again includes opposed faces 51 and 52, with a first series of cups 53, 53 projecting from the face 51 for soap adhering purposes, while a second series of cups 54, 54 project from the face 52 for the purpose of adhering the unit of FIGURE 5 to a wall surface. In this form of the invention, the cups 54, 54 have an appreciably larger cup area so that even though a smaller number of cups are provided, the overall holding power of the same will exceed the overall holding power of cups 53, 53.

The modified form of the invention shown in FIGURE 6 is similar in planar outline to that described previously in connection with FIGURE 4 and, accordingly, includes a base 60 having opposed faces 61 and 62. A first series of cups 63, 63 projects from the face 61, while a single cup 64 projects from the face 62, as shown in FIGURE 6, with the holding power of the single cup 64 again preferably exceeding the combined holding power of the cups 63, 63.

It should be noted with regard to FIGURE 6 construction that it may be necessary, in certain instances, to provide a backup plate of rigid material such as steel with such backup plate being apertured so as to encircle the shank of the cup 64 and provide support for the base 60 by virtue of being disposed in supporting adjacency with the surface 62 thereof. Such reinforcing plate may either be loosely attached by encirclement as above described or may be releasably secured as by gluing or other securing or may be embedded within the base 60 if desired.

With regard to the operation of the modified forms of the invention shown in FIGURES 4, 5, and 6, it should be noted that the same are operated merely by pressing the surface adhering cup or cups thereof against the wall surface, followed by positioning of the soap on the soap receiving cups.

In all of these preferred and modified forms of the invention, it is to be understood that the invention is not limited to any particular planar shape, with these forms of the invention disclosing a circular configuration for the convenience of illustration.

In like fashion, the modifications of FIGURES 4, 5 and 6 again contemplate use of a unitary structure of rubber or rubbery material, including plastic, with the cups and base in each case preferably being integral with the supporting sheet from which the same project, as described.

While a full and complete disclosure of the invention has been set forth in accordance with the dictates of the patent statutes, it is to be understood that the invention is not intended to be limited to the specific form herein shown.

Accordingly, modifications of the invention may be resorted to without departing from the spirit hereof or the scope of the appended claims.

I claim:

1. A soap holding device of the character described, comprising;

(A) a thin pliable sheet member having opposite substantially parallel faces;

(B) first vacuum cup means including a plurality of separate flared vacuum cups carried by the projecting ends of resilient shank members that project outwardly from one said face whereby said cups are flexibly spaced from one said face;

(C) second vacuum cup means including at least one flared vacuum cup carried by and facing outwardly from said remaining face;

(1) said second vacuum cup means supporting said soap holding device with respect to a surface while said first vacuum cup means supports an object such as soap with respect to said holding device;

(2) said shank members being relatively short in length whereby minimal deflection thereof is present during support of said soap by said vacuum cup means.

2. The device of claim 1 further characterized by the fact that said second vacuum cup means include a series of flared vacuum cups; said vacuum cups of said second vacuum cup means being identical in configuration to said first vacuum cups; said vacuum cups of said first and second vacuum means having their shanks respectively offset with respect to each other; said second vacuum cup means including a greater number of vacuum cups than said first vacuum cup means.

3. The device of claim 1 further characterized by the fact that said second vacuum cup means include a lesser number of vacuum cups than said first vacuum cup means; said vacuum cups of said second vacuum cup means each having a greater holding power than any single vacuum cup of said first vacuum cup means.

4. The device of claim 1 further characterized by the fact that said second vacuum cup means include a single vacuum cup having a holding power exceeding the combined holding power of said vacuum cups of said first vacuum cup means.

5. The device of claim 1 further characterized by the fact that said remaining face is formed to concave cross section whereby the same defines said second vacuum cup means.

6. A soap holding device of the character described, comprising;

(A) a resilient body portion formed into the configuration of a vacuum cup and including concave and convex faces;

(B) a plurality of vacuum cups carried by and facing outwardly from said convex surface in opposed relationship to said concave surface.

7. The device of claim 6 further characterized by the fact that said cups have at least two different shank lengths whereby the cup portions thereof may be aligned into substantially coplanar relationship with each other upon adherence of said concave face to a surface under suction conditions.

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