

(No Model.)

W. B. WHITE.
AIR CUSHION.

No. 441,269.

Patented Nov. 25, 1890.

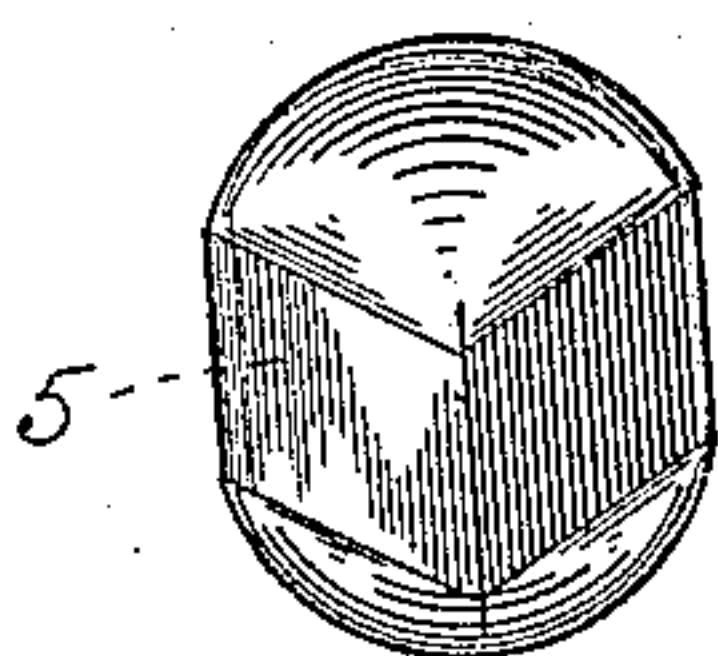


Fig. 1.

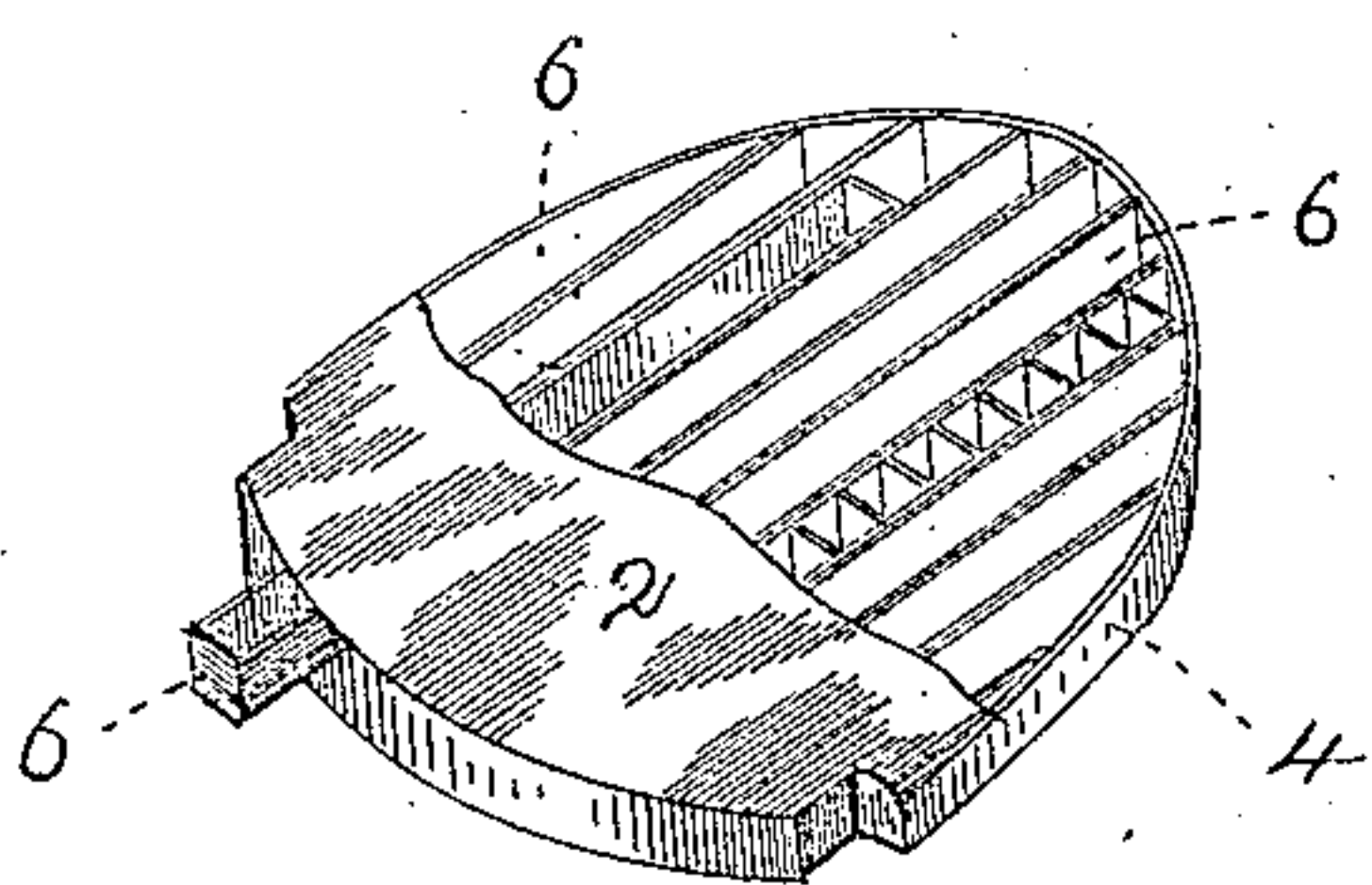


Fig. 2.

Witnesses.

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WARREN B. WHITE, OF ABINGTON, MASSACHUSETTS.

AIR-CUSHION.

SPECIFICATION forming part of Letters Patent No. 441,269, dated November 25, 1890.

Application filed February 24, 1890. Serial No. 341,553. (No model.)

To all whom it may concern:

Be it known that I, WARREN B. WHITE, a citizen of the United States, residing at Abington, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Air-Cushions; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to cushions, particularly that class termed "elastic" cushions, preferably such as are made of flexible or yielding material, which shall be impervious to air. These cushions are formed to serve as a receptacle for a quantity of air to be retained therein, the air serving as a substitute for springs, hair, sponge, moss, or other filling, which shall give a yielding or elastic character to the cushion, seat, or other article of support with which it is employed.

Figure 1 is a perspective view of one of the air-receptacles in which the sides are plane surfaces while the ends are convex. Fig. 2 shows an exterior covering fitted with pockets.

In my invention I propose to mass or group together a series of air-tight vessels in such manner as to form a cushion or seat of any desired shape. Thus each air-vessel is separate and independent, and should a leak occur in one it is easily remedied and does not materially affect the general utility of the cushion.

In practice I proceed as follows: The exterior covering of the cushion, whether of leather, cloth, or otherwise, is cut to fit the article with which it is to be employed. If for a chair, it is to be made of the proper shape, and, for instance, as shown in Fig. 2, is composed of two pieces 2 3—top and bottom, respectively—and with an intermediary connecting-strip 4. This strip is generally of a width to correspond with the thickness of the cushion when the latter is finished and complete. Thus having previously made the cushion-cover, I now proceed to fill it with air-tight vessels 5, in which a suitable amount

of air is confined. Such vessels are to be preferably of a diameter or size proportionate to the thickness of the cushion, and, moreover, are to be so shaped as to fit snugly together, having their adjacent sides contiguous, as would occur were they triangular, square, or hexagonal in cross-section. However, I do not desire to be limited to any particular form or construction of the air-retaining vessels or receptacles.

In Fig. 1 is shown the form of an air-tight vessel which I propose to use. This vessel is to be made of some flexible material, and is constructed with rounded ends and with plane surfaces for the sides, so arranged that a cross-section transversely of the body of such vessel is a regular polygon in shape. Hence the vessel may be a triangle, rectangle, or a pentagon in cross-section, depending upon the number of plane surfaces which form the sides thereof. The purpose of this construction is to enable the adjacent surfaces of the individual air-vessels to be contiguous at every point, and thus when the latter are massed or grouped in a confined space mutual support is afforded and a better result is obtained. In many instances the resistance of these air-vessels to any pressure varies, and by my arrangement the weaker vessels are supported and strengthened by the adjacent stronger ones.

The advantages of a cushion constructed as described are many and obvious. Repairs can be effected at a very small expense, since if any of the air-vessels become worn or leak new ones can be readily substituted. The air-containing vessels when grouped together serve so support each other. Ordinary stuffed cushions can be filled at small cost by removing the filling and then inserting the requisite number of air-vessels. The elasticity of the cushion can be varied by supplying air-vessels in which is contained a greater or less quantity of air. The smaller the quantity in a given space, the more flexible and easy the cushion. Moreover, for sanitary purposes, such an arrangement is particularly applicable to mattresses, since the air-vessels can be easily removed or cleansed and returned to place within the mattress-covering.

If desired, the cushion may be supplied with a series of pockets 6, arranged side by side, and with the group of air-vessels within.

These pockets, being removable, can readily
5 be pulled out, the air-vessels tested to find a leak, and again restored to place; or the cushion-cover or retaining device may be supplied with transverse intersecting strips, forming places in which each air-vessel can be
10 held separately, as likewise shown in Fig. 4.

What I claim is—

1. As a new article of manufacture an air-tight flexible vessel with rounded ends, plane surfaces for sides, and of regular polygonal
15 form in transverse cross-section, substantially for purposes set forth.

2. An air-cushion composed of a series of flexible air-tight vessels formed with rounded ends and polygonal sides, the plane adjacent
20 surfaces of said vessels being contiguous and

adapted to afford mutual support when grouped or massed together, substantially as herein specified.

3. In combination with the covering forming the exterior of a cushion, seat, or other
25 support, a series of pockets formed by strips interiorly of said covering and a series of removable air-containing flexible vessels having rounded ends and of polygonal shape in cross-section, the sides of said vessels being
30 contiguous throughout for mutual support and the vessels to be held in fixed relative positions, substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

WARREN B. WHITE.

Witnesses:

WILLIAM B. ARNOLD,
H. E. LODGE.