Feb. 20, 1951 L. M. DIXON 2,542,640

CONTAINER WITH ELASTIC STRIP CELL STRUCTURE

Filed Sept. 18, 1945

Fig. 1

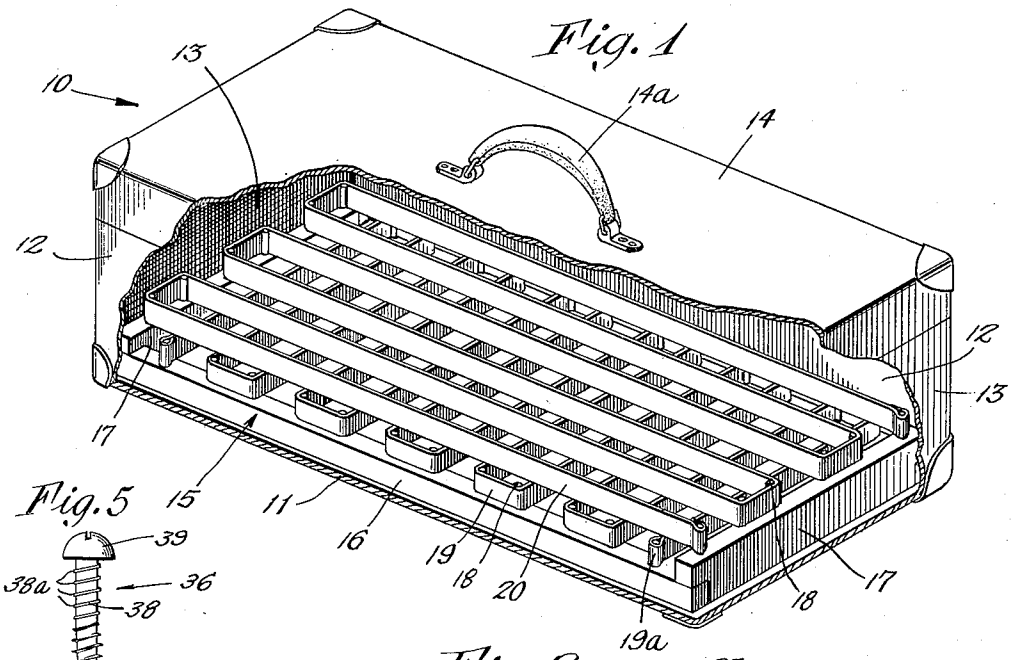


Fig. 5

Fig. 2

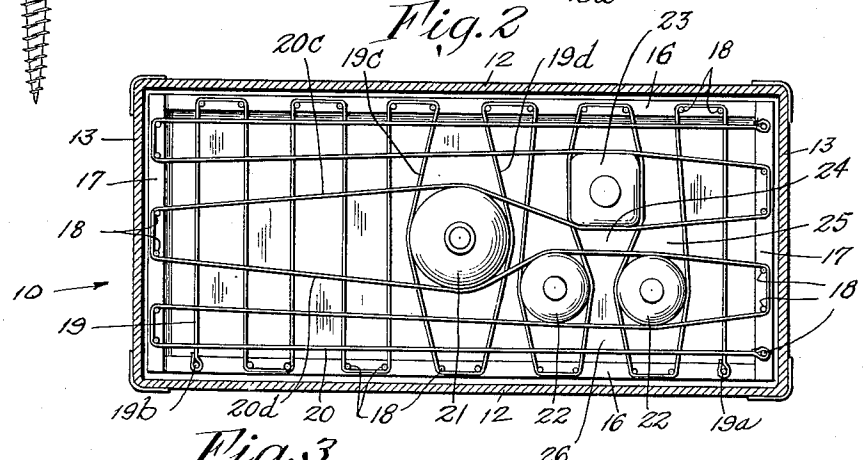


Fig. 3

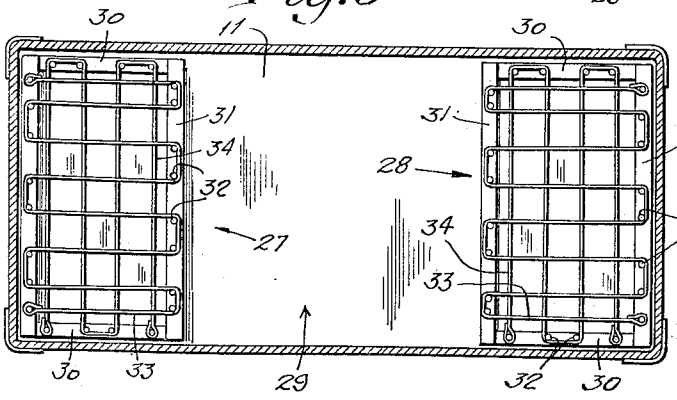
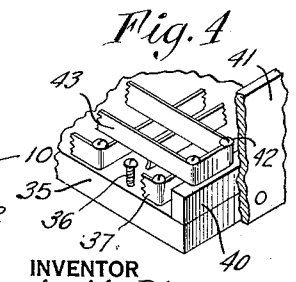


Fig. 4



INVENTOR
Lewis M. Dixon
BY Johnson & Kline
ATTORNEYS

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CONTAINER WITH ELASTIC STRIP CELL STRUCTURE

Lewis M. Dixon, Sea Cliff, N. Y.

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12 Claims. (Cl. 206—12)

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This invention relates to means, such as kits, for holding and/or carrying bottles, containers, and other small articles which often form part of luggage.

An object of the invention is to provide a simple and practical, economically produceable means, as for instance, a traveling kit or medicine chest, which will firmly hold, neatly arranged in partitioned spaces, a large number of different size, relatively small articles such as bottles, cans, tubes for paste, brushes, small packages, boxes, luggage and the like, so that these articles may be conveniently and safely stored, or transported in upright condition and so as to be readily accessible for use.

This is accomplished by the provision of a novel partitioning unit and container enclosing and supporting the same, the partitioning unit being so arranged that the size of the individual spaces provided thereby may be increased or decreased substantially, and the shape of the spaces changed, so as to receive and conform to articles of a large variety of shapes and sizes. Besides, as the kit comprising the unit and container is preferably made, the articles of assorted sizes and shapes may be carried within the container, resting on the bottom thereof or other support, these articles being firmly held in spaced juxtaposed positions so that breakage, spillage, etc., is prevented, and so that the articles are neatly arranged and readily accessible.

In one embodiment of the invention illustrated herein as exemplary thereof, the partitioning unit comprises a frame adapted to closely fit within the sides of the container and rest against the bottom of the latter, the frame having flat strips or ribbons of elastic material such as rubber carried by it in crisscross manner so as to form substantially a resilient and extensible partitioning latticework. The strips are disposed edgewise to the bottom of the container, and are located at two levels, one above the other, the portions of the strips in each level extending in spaced parallel relation with each other.

Since the strips are stretchable and therefore displaceable with respect to each other, they may be shifted so as to change the openings between them to accommodate different sizes and shapes of articles.

The partitioning unit is preferably complete in itself, and may be secured inside the container either permanently or temporarily, in the latter case the unit being removable if it is desired to employ the container for some other purpose.

The partitioning unit may cover the entire

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bottom of the container or only part of it as desired, and instead of one, a pair of partitioning units may be used and these may be spaced from each other, so that an area of the bottom of the container between them is left free for supporting large or bulky articles not suitable for support by the partitioning units.

Other features and advantages will hereinafter appear.

In the accompanying drawings:

Figure 1 is a perspective view of one embodiment of my invention, the case or container being shown broken away to reveal its interior.

Fig. 2 is a top or plan view of the container and partitioning unit, the cover of the container being removed and a number of bottles being shown supported by the unit in spaced juxtaposed positions.

Fig. 3 is a top or plan view of a container having two separated partitioning units, the cover of the container being removed.

Fig. 4 is a fragmentary perspective of a container made according to another modification of the invention, and

Fig. 5 is an elevation of a screw peg used in the container of Fig. 4.

Referring to Figs. 1 and 2, the traveling or medicine kit exemplifying the present invention comprises a container 10 of rectangular shape, having a bottom 11, side walls 12 and end walls 13. The case or container 10 has a suitable cover 14 which may be hinged or otherwise fastened in place, a carrying handle 14a being secured to the cover.

For the purpose of supporting articles of various size and shape in neatly arranged positions within the container 10, a novel partitioning unit 15 is provided, adapted to rest against the bottom 11 of the case, this unit comprising a pair of spaced parallel side rails 16 which at their ends are mortised into spaced parallel end rails 17. The rails 16 and 17, which may be formed of wood, may be secured together in any suitable manner as by gluing, nailing, etc. As shown in Fig. 1 the end rails 17 are made higher than the side rails 16 so that the top surfaces of the sets of rails lie in different planes, for purposes to be explained later. However, by this construction the joining or mortising of the rail ends is simplified, the rails 17 being merely notched to receive the ends of the rails 16.

For the purpose of providing a simple and economical, flexible latticework stretching across the frame 15, the sets of rails 16 and 17 are provided with upstanding pegs 18 arranged in rows

extending longitudinally of the rails, and a pair of flat strips or ribbons 19 and 20 of elastic material such as rubber, is provided to be supported on the pegs 18. One end 19a of the strip 19 is secured to one of the end pegs of a rail 16, and the strip stretched back and forth around the pegs 18 as shown, so as to span the area enclosed by the frame 15. The other end 19b of the strip 19 is secured to the opposite end-peg of the rail 16 as shown.

In a similar manner the elastic strip 20 is secured at its ends to the end-pegs 18 of one of the rails 17, and is stretched back and forth around the pegs to extend above the strip 19 and to also span the area enclosed by the frame.

The strips 19 and 20 therefore form a crisscross pattern or grid, crossing each other at an angle, in the present instance, of approximately 90°. Due to the upright positioning of the pegs 18, the strips will be disposed edgewise with respect to the bottom 11 of the container, and the strip 19 will be spaced from the bottom by the thickness or height of the rails 16.

The latticework formed by the strips will provide, in effect, partitions having yieldable or displaceable walls, and the kit and partitioning unit as thus provided by the invention will be able to firmly support in neatly arranged, spaced, juxtaposed positions, a large number of articles of various sizes and shapes. Referring to Fig. 2 a large bottle 21 is shown as being supported between the portions 19c and 19d of the strip 19 and between the portions 20c and 20d of the strip 20. Also, a pair of smaller containers 22 of round shape, and a container 23 of substantially square shape are shown supported by other portions of the strips 19 and 20.

It will be evident that small articles may be supported in constricted spaces such as the spaces 24, 25, 26, etc., formed by displacement of portions of the strips 19 and 20 after articles of comparatively large girth have been inserted.

The elastic strips 19 and 20 may be stretched quite tightly between the rails 16 and 17, thereby providing firm supporting surfaces for engagement with the sides of the articles being carried. The pressures thus exerted, together with the widths of the strips 19 and 20, effectively support articles regardless of their shape, and prevent breakage, spillage, etc. Also, the surfaces of the strips 19 and 20, when the latter are made of rubber, have a non-skid or gripping action which prevents any tendency for slippage where the articles are being engaged, and this further contributes to the efficacy of the partitioning unit.

The ends of the strips 19 and 20 may be secured to the pegs 18 in any suitable manner. However, they are shown as being formed into eyes or loops which are merely slipped over the pegs. The procedure of applying the strips 19 and 20 to the rails 16 and 17 of the frame may therefore obviously be carried out with extreme ease and rapidity.

The frame 15 may be secured in the case 10 in any suitable manner, either permanently or demountably, and if the latter mounting is employed, the container may be used for other purposes by merely lifting out the frame and setting it aside.

A modified form of the invention is shown in Fig. 3. According to this form the case 10 is provided with a pair of partitioning frames 27, 28 adapted to be spaced from each other and to fit across the end portions of the container. By this arrangement a large space 29 is left between the frames 27 and 28 so that large or bulky articles, or articles which it is not desired to support within the partitions of the frames, may still be included and carried within the case.

The frames 27 and 28 may be formed similarly to the frame 15 already described. For instance, the frame 28 may have end rails 30 mortised into side rails 31, both sets of rails carrying upright pegs 32 around which are stretched flat elastic bands or strips 33 and 34.

The strip 34 is spaced above the bottom 11 of the container by the thickness of the rails 30, and the strip 33 is located in a level above that of the strips 34 by virtue of the rails 31 being of greater height than the rails 30.

Figs. 4 and 5 illustrate a container made according to a modification of the invention. As shown in Fig. 4, the container may have a comparatively thick wood bottom 35 so that pegs in the form of roundhead wood screws 36 may be firmly screwed and supported therein without their tips breaking through the underside. The screws 36 are each of such length that a portion of the shank below the head projects from the inside surface of the bottom 35 sufficiently to enable a flat elastic strip 37 to be wrapped around the said shank portion, the strip being passed back and forth in zigzag fashion between rows of screws as already described above. Preferably the threads 38 of the screws 36 extend along the entire shank, as shown in Fig. 5, and have flatted crests 38a at least where they are exposed for engagement with the strip 37. By this arrangement there is reduced any tendency for the elastic strip to slip on the screws due to an unbalanced pull on adjacent portions of the strip, since the threads 38 would tend to move the strip edgewise, either against the container bottom 35 or against the screwheads 39. By flatting the screw thread crests, the sharp edges are removed, and there is avoided cutting of the strip 37.

As shown in Fig. 4, end rails 40 may be mounted on the bottom 35 of the container adjacent the ends 41, and may be secured to the latter if desired, and screws 42 anchored in the end rails to carry a second flat elastic strip 43, which is located above and edgewise to the strip 37, and is passed around the screws 42 so as to follow a zigzag path, crisscrossing the strip 37.

If desired, the screws 42 may be of stout diameter, and long enough to extend into and anchor to the bottom 35, and the end rails 40 may then be dispensed with entirely. With this arrangement, the threads of the screws 42 would prevent the elastic strip 43 from slipping longitudinally on the shanks, as would also the edgewise engagement of the strips 37 and 43.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others.

I claim:

1. An article-supporting unit for use in a case, comprising a frame adapted to be supported adjacent the bottom of the case; and a resilient latticework comprising two sets of flat elastic strips extending back and forth across the frame from side to side, the strips of each set being in spaced relation with each other and being disposed edgewise to the bottom of the casing, and the strips of one set extending over and at an angle to the strips of the other set to thereby provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so

that articles of different girth may be supported in upright position on the bottom of the case between transverse pairs of adjacent strips of both the said sets.

2. In a kit for supporting and carrying different size articles in spaced, juxtaposed relation to each other, comprising a casing having a bottom, side walls, and a top hinged to the walls, said top having a handle whereby the casing may be lifted and carried; the combination of a resilient latticework stretched across the inside of the casing and comprising flat strips of resilient material extending back and forth across the casing in edgewise relation, the strips being stretchable and therefore displaceable with respect to one another to vary the spacing between them, so that different size articles may be inserted each in a space between transversely extending pairs of adjacent strips, the articles thereby being supported upright in spaced, juxtaposed relationship by the flat surfaces of the strips when the kit is carried by said handle.

3. A kit for supporting different size articles in spaced, juxtaposed relation to each other, comprising a casing; and two sets of flat elastic strips secured in the casing, the strips of each set extending between opposite walls of the casing in spaced, broadside relation with each other, and the strips of one set being disposed edgewise to and at an angle with the strips of the other set to thereby provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so that articles of different girth may be supported in juxtaposed, spaced relationship between transverse pairs of adjacent strips of both the said sets.

4. A kit for supporting different size articles in spaced, juxtaposed relation to each other, comprising a casing having a bottom and side walls; and two sets of flat elastic strips secured in the casing, disposed edgewise to the bottom of the latter and spaced therefrom, the strips of each set extending back and forth between opposite walls of the casing in spaced relation with each other, and the strips of one set being disposed at an angle to the strips of the other set to thereby provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so that articles of different girth may be supported in upright position on the casing bottom between transverse pairs of adjacent strips of both the said sets.

5. An article-supporting unit for use in a case, comprising a frame adapted to be supported within the case, said frame having pairs of oppositely disposed parallel rails connected together at their ends, one pair of rails overlapping the other pair so they lie in different levels; upstanding pegs carried by the rails; a flat elastic strip extending around the pegs of, and back and forth between the first set of rails so that portions of the strip are in spaced, juxtaposed relation, said strip being disposed edgewise to the bottom of the case and spaced therefrom; and a second flat elastic strip located above the first strip and extending around the pegs of, and back and forth between the second pair of rails so that portions of the second strip are in spaced juxtaposed relation, said portions of the first and second strip crossing each other at an angle thereby to provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so that articles of different girth, while resting on the casing bottom, may be supported in spaced, juxtaposed relationship between transverse adjacent portions of the said first and second strips.

6. A kit for supporting different size articles in spaced, juxtaposed relation to each other, comprising a rectangular casing having a bottom and side walls; a frame within the casing, comprising a pair of parallel rails extending respectively along one pair of opposite walls adjacent the bottom, and a second pair of parallel rails extending along the other opposite walls, supported on the ends of the first pair of rails to be positioned thereabove; a set of flat elastic strips secured to the first pair of rails and extending over the space between the latter in spaced relation, said strips being disposed edgewise to the casing bottom, to lie substantially in the same level as the second pair of rails; and a second set of flat elastic strips secured to the second pair of rails and extending over the space between the latter in spaced relation, the strips of the said second set extending over and at an angle to the strips of the first set to thereby provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so that articles of different girth, while resting on the casing bottom, may be supported in spaced, juxtaposed relationship between transverse pairs of adjacent strips of both the said sets.

7. A kit for supporting different size articles in spaced, juxtaposed relation to each other, comprising a rectangular casing having a bottom and side walls; a frame within the casing, comprising a pair of parallel rails extending respectively along one pair of opposite walls adjacent the bottom, and a second pair of parallel rails extending along the other opposite walls, secured to the ends of the first pair of rails; upstanding pegs carried by the rails; a flat elastic strip extending around the pegs of, and back and forth between the first set of rails so that portions of the strip are in spaced, juxtaposed relation, said strip being disposed edgewise to the casing bottom and spaced therefrom; and a second flat elastic strip located above the first strip and extending around the pegs of, and back and forth between the second pair of rails so that portions of the second strips are in spaced, juxtaposed relation, said portions of the first and second strip crossing each other at an angle thereby to provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so that articles of different girth, while resting on the casing bottom, may be supported in spaced, juxtaposed relationship between transverse adjacent portions of the said first and second strips.

8. A kit for supporting different size articles in spaced, juxtaposed relation to each other, comprising a casing having a bottom and side walls; rows of headed screws which project upward in a direction away from the casing bottom, said rows extending along the interiors of the side walls and the shanks of the screws being substantially completely threaded; and sets of elastic strips secured respectively to opposite rows of screws, the strips of each set being passed around the screw shanks so as to extend in equispaced substantially parallel relation with each other, and the strips of one set extending closely adjacent, and at an angle to the strips of the other set to thereby provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so that articles of different girth may be supported between transverse pairs of adjacent strips, the threads of the shanks preventing slippage of the strips on the latter.

9. A kit for supporting different size articles in spaced, juxtaposed relation to each other, comprising a casing having a bottom and side walls; rows of headed screws which project upward in a direction away from the casing bottom, said rows extending along the interiors of the side walls and the shanks of the screws being substantially completely threaded; and sets of elastic strips secured respectively to opposite rows of screws, the strips of each set being passed around the screw shanks so as to extend in equispaced substantially parallel relation with each other, and the strips of one set being disposed closely adjacent, and at an angle to the strips of the other set to thereby provide substantially circumscribed spaces which may be enlarged by stretching and displacing the strips, so that articles of different girth may be supported between transverse pairs of adjacent strips, the threads of the shanks where engaging the strips being flatted to prevent cutting of the latter, and said threads preventing slippage of the strips on the shanks.

10. The invention as defined in claim 5 wherein the pegs for supporting the strips have smooth cylindrical walls.

11. The invention as defined in claim 5 wherein the pegs supporting the strips comprise headed screws, said screws having the ends threaded into the rails with the shanks engaging the strips and the heads overlying the upper edges of the strips.

12. The invention as defined in claim 11 wherein the threads on the pegs engaged by the strips prevent slippage of the strips on the pegs and are flattened to prevent cutting of the strips.

LEWIS M. DIXON.

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