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2,461,062

SANITARY MATTRESS

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Fig. 1

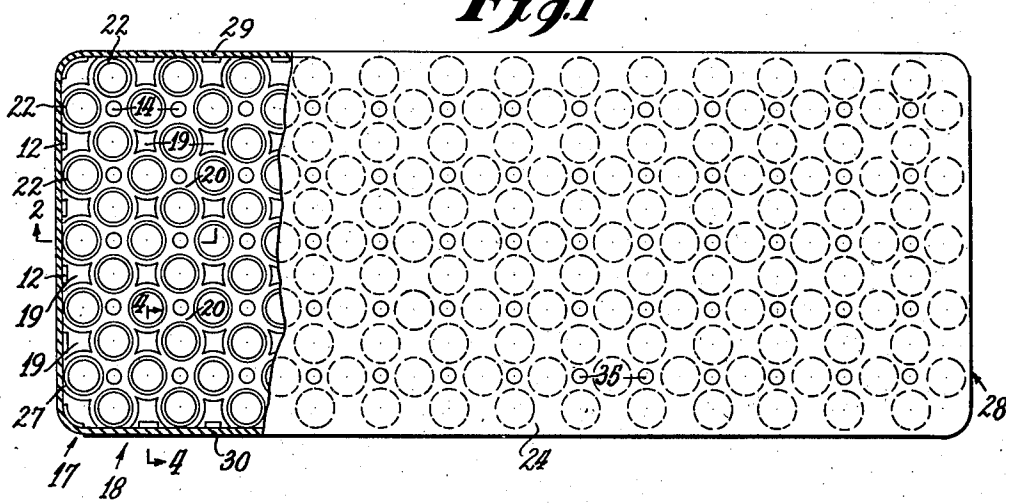


Fig. 2

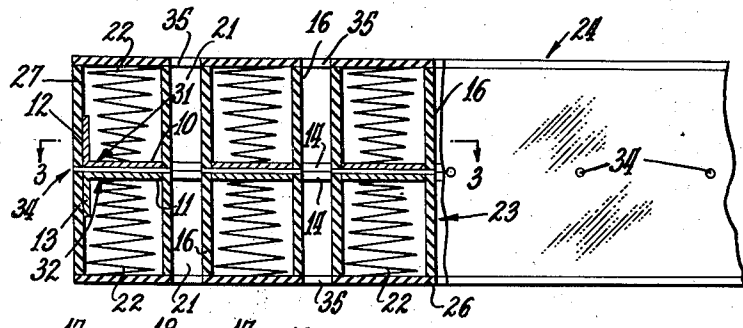


Fig. 4

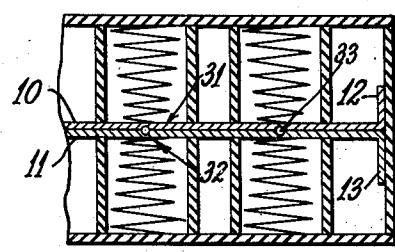
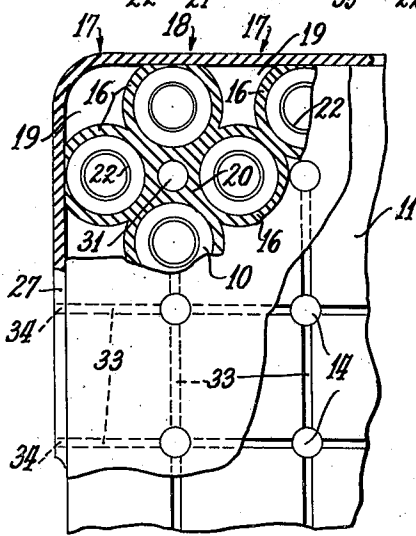


Fig. 3



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SANITARY MATTRESS

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1 Claim. (Cl. 5—353)

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This invention relates to sanitary mattresses, and aims to provide a sturdy and durable, readily reversible, sanitary and air conditioned or ventilated mattress, adapted for use in hospitals as well as in homes, hotels, etc.

The above and other objects will become apparent in the description below, wherein like-named parts refer to the accompanying drawings. It is to be understood that it is neither intended nor desired to limit the invention necessarily to the specific details shown or described, excepting insofar as they are essential to the spirit and scope of the invention.

Referring briefly to the drawings, Fig. 1 is a plan view, with parts broken away and partly in section, of the improved mattress.

Fig. 2 is a side elevational view of the mattress, partly in section on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary plan view of the mattress, with parts broken away and partly in section on the line 3—3 of Fig. 2.

Fig. 4 is a cross-sectional view taken on the line 4—4 of Fig. 1.

Referring in detail to the drawings, the numerals 10 and 11 indicate a pair of equidimensional flat sheets of strong yet resilient material, such as, for instance, steel or flexible plastic material, laid one upon the other and provided along their peripheral edges with bent back tongues 12 and 13, respectively. These tongues are bent back at an angle of 90 degrees and extend in mutually opposite directions, as shown. A plurality of spaced vertically aligned openings 14 are provided through both sheets 10 and 11.

Mounted upon the upper sheet 10, is a single moulded rubber member 15 having formed therein a plurality of spaced vertical walls, circular in cross-section, arranged in honeycomb fashion, with the walls in tangential contact with each other, as shown in Fig. 3. It is apparent that the transverse rows of walls 16 are staggered with relation to their neighboring rows, thus providing alternate rows 17 and 18 which include not only the walls 16 thereof but also, between the said walls, unoccupied spaced or chambers 19 and 20, respectively. The chambers 20 occurring in alternate transverse rows are filled in with the rubber excepting for a central vertical portion which is left as a cylindrical opening through the rubber mould, shown at 21 and which is aligned with the opening 14 through the sheets or plates 10 and 11. Coiled springs 22 are mounted in the cylindrical walls 16, either loosely or with their bases attached in any manner, not shown, to the sheet 10.

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A second identical member 23, like that shown at 15, having the same cylindrical walls 16 and all the other features of the member 15, is mounted under the sheet 11, with all of the walls 16 and the other parts thereof in vertical alignment with those of the member 15.

The entire structure thus far described, that is, the interior of the mattress, is covered with a rubber cover 24 having the top wall 25, bottom wall 26, end walls 27 and 28, and side walls 29 and 30, fitting snugly around the said interior structure. This cover may be sealed, by vulcanizing or any other means, not shown, as soon as it has been applied, or it might be provided with one of the end or side walls left in the manner of a flap so that it may be removed from the mattress and of course in that case provided with some form of closure, not shown, such as buttons, a zipper, or the like.

Semi-cylindrical channels 31 and 32 are cut into the mutually opposed or contacting surfaces of the sheets 10 and 11, respectively, communicating between the openings 14 of the sheets, so that when the sheets are juxtaposed as shown, these channels form the complementary halves of cylindrical ports 33 giving communication between all of the openings 14 and hence all the vertical openings 21. The end and side walls of the cover 24 are provided with openings therethrough, shown at 34, in alignment with the peripheral ends of the ports 33. Likewise, openings 35 are provided in the top and bottom walls of the cover 24 in alignment with the ends of the vertical openings 21.

The preferable form of mounting the cover 24 would probably be to secure it in sealed condition, as previously mentioned, and also to secure it around the openings 35 to the rubber in the chambers 20 surrounding the openings 21, also by vulcanizing, gluing, or any other means, not shown, in order to prevent slipping of the cover openings 35 out of alignment with the vertical openings 21. The same may also be done around the end and side wall openings 34 for the same reason.

A mattress such as described above could be used to good advantage in hospitals or for ill persons generally, particularly the bedridden, as well as in the homes for general use. If an excretion is passed from the bladder onto the mattress, it will pass down through the openings 21 through the bottom of the mattress, where it might be caught by a pan, not shown. Owing to the sealing between the walls of these openings and the rest of the mattress, none of the excretion would penetrate into the interior struc-

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ture, and the walls of these openings could readily be rinsed or flushed to clean them. Circulation of air through the channels 33 into the openings 21 provides for constant ventilation of the openings 21, and the movements of a person in the bed would, as is obvious, disturb the air in the channels 33 and the openings 21 to enhance the ventilation and prevent the trapped air from becoming stagnant.

The resiliency of the sheets or plates 10 and 11 obviously adds to the springiness or softness of the mattress, yet it gives a degree of normal rigidity which is desirable, and it of course provides positive reinforcement to prevent any substantial amount of bending of the mattress. The latter feature is important in connection with turning the mattress, which is a common and desirable practice, and it simplifies the act of turning. Since the mattress is identical in structure and function whether one side or the other is on top, it may obviously be used in either position.

Obviously, modifications in form and structure may be made without departing from the spirit and scope of the invention.

I claim:

A mattress comprising a pair of resilient flat sheets mounted one upon the other and having a plurality of mutually aligned vertical openings therethrough, a pair of members of waterproof material mounted one on the upper of said sheets and the other against the lower of said sheets, said members having a plurality of spaced cylindrical walls formed therein, said cylindrical walls of one of said members being in vertical alignment with said walls of the other member, coiled springs mounted within said cy-

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lindrical walls, aligned vertical openings through said members in alignment with said aligned openings through said sheets, and a cover of waterproof material enclosing said mattress, said cover having openings therethrough in alignment with said aligned vertical openings, the mutually juxtaposed surfaces of said sheets having complementary semi-cylindrical channels therein extending between the opposed peripheral edges of said sheets and intersecting said aligned sheet openings thereby providing cylindrical passages communicating between said aligned sheet openings and the peripheral edges of said sheets, said cover having openings in the side and end walls thereof in alignment with the outer extremities of said passages at the peripheral edges of said sheets, said cover having openings through the top and bottom walls thereof in alignment with said aligned vertical openings of said members.

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