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E. J. ANTONI.

BED.

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Fig. 1

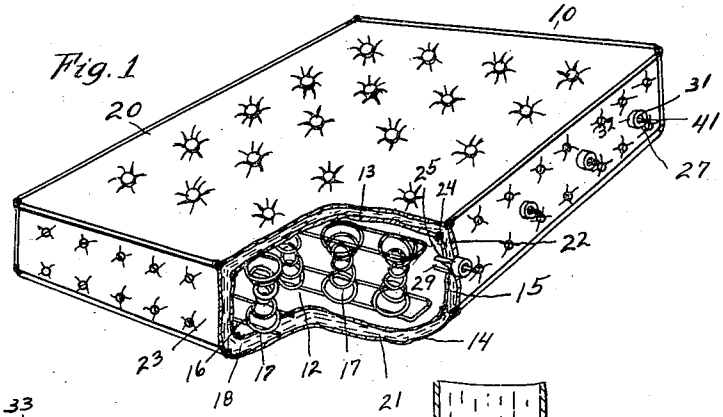


Fig 2

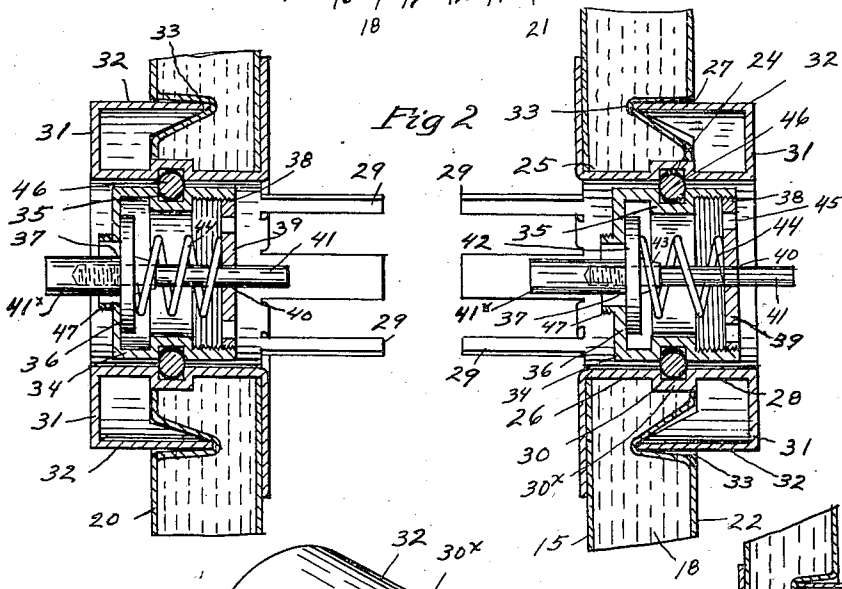
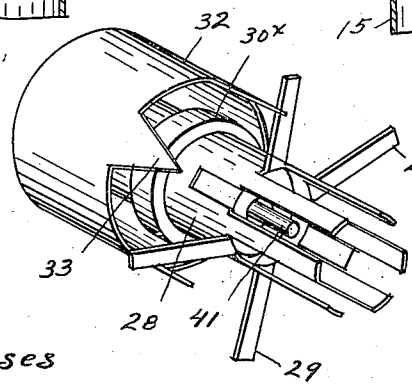


Fig 3



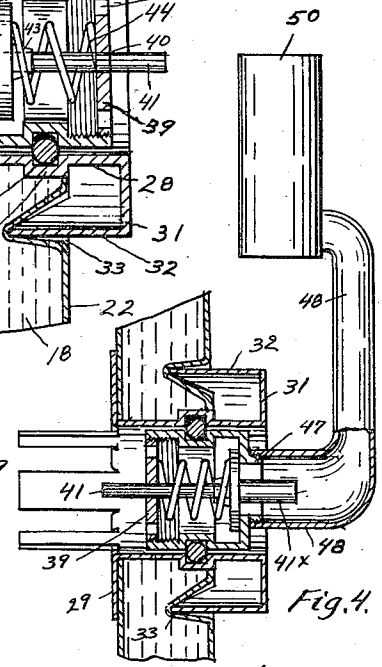


Fig. 4.

Witnesses

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To all whom it may concern:

Be it known that I, ERNEST J. ANTONI, a citizen of the United States of America, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Beds; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawing, forming a part of this specification.

The object of the invention is a sanitary bed within which air enters and from which expelled by compression of its parts. Second: to afford means for fumigating and disinfecting the bed.

The invention consists in the novel construction and combination of parts such as will be first fully described and specifically pointed out in the claims.

In the drawings Figure 1 is a view in perspective of a bed embodying the invention. Fig. 2 are horizontal sectional portions of the sides of the case and cover of the bed showing in detail the openings, the boxing within the openings and the valve casings and self closing valves. Fig. 3 is a detail view in perspective of one of the boxes in the sides of the bed for the reversible valve casing. Fig. 4 is a view of the portion of one side of the bed the boxing and valve casing as in a reversed position and the tube nipple and tube for supplying the fumes or disinfectant from a suitable storage vessel.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

Referring to the drawing 10 indicates the bed which consists of an inner case 12, which is preferably made from burlap or like material and having a top 13, bottom 14 and vertical sides and ends 15 and 16 respectively. Within the case 12 are spiral springs 17 which are secured at one end to the top 13 and at the other end to the bottom 14 of the case, these springs being arranged in series within the case and at proper distances apart to afford the extension of the top and bottom and subject to the usual compression from super imposed weight. Upon the outer surfaces of the top and bottom sides and ends of the case 12 is a covering of cotton batting 18. Over the cotton batting is extended the bed cover which is also provided with a top 20 bottom 21 and sides and ends 22 and 23 respectively. The bed constructed as described affords the desired air space without depending upon the air for expansion.

In the sides 22 of the bed cover are made vent openings 24 and in the side 15 of the case 12 are made openings 25 which are opposite to or register with the openings 24 and smaller in size. These openings 24 and 25 are made through the sides of the mattress cover and the case 15 at suitable distances apart in the longitudinal direction of the bed and also pass through the cotton batting 18 at 26. 27 indicates stationary cylindrical boxings or tubes in the openings 24 and 25 in the sides of the bed cover and case 12. The inner end of the body portion 28 of each boxing extends within the said opening 24 of the bed cover and within the opening 25 in the case 15 and upon the said end of the portion 28 of the boxing are extended narrow strips 29, which are bent outwardly in radial lines and upon the inner surface of the sides 15 of case 12. In the said body portion 28 of the boxing within the opening 24 of the bed cover is a depression or recess 30 extending outwardly from and concentric with the inner surface of said portion 28 and forming a corresponding projection $30^{\times}$ upon its outer surface which being larger in circumference than the opening 26 in the cotton batting the latter is forced inwardly and packed closely against the outer surface of the case 15 held by the strips 15 and also around the outer surface of the portion 28 of the boxing and thus preventing the passage of air past the packing. The outer end of the cylindrical body portion 28 of the boxing extends outwardly beyond the line of the outer surface of the bed cover and about an equal distance from the depression 30 as that between said depression and the inner end of the body portion 28 of the boxing. Upon said outer end of the body portion 28 of the boxing is an outwardly extended flange 31 formed integral with the said bod portion and which is radial thereto and with the outer end of said flange is connected a downwardly extended cylindrical portion 32, which is concentric with the body portion 28 of the boxing the lower end of said cylindrical portion 32 extending to the line of the outer surface of the mattress cover. Upon the said lower end of the portion 32 of the boxing are projections 33 which are inclined downwardly and inwardly to a point, said points extending downwardly a short distance below a line extending transversely through the depression 30 in the body portion 28 of the boxing, the said pointed extensions 33 forcing portions of the bed cover with which they come into contact inwardly and also the cotton batting 26 whereby the boxing 28 is held securely in position in the bed cover. 34 indicates the reversible valve case which consists of a hollow cylinder short in length and slightly less in circumference than the inner circumference of the body portion 28 of the boxing. In the outer surface of the casing 34 at a point about equi distant from its ends is a depression 35, extending concentrically with said surface. An end plate 36 forms one end of the cylinder in which is a valve opening 37. The inner surface of the other end of the casing is screw threaded at 38 and in said opening is fitted a screw threaded annular plate 39. In said plate is a central opening 40 through which extend one end of a valve stem 41, the other end of which stem is screw threaded and upon said end is fitted a centrally perforated valve plate 42.

Upon the stem 41 is a shoulder 43 which limits the movement of the valve in one direction and an internally screw threaded pin 41× is fitted to the said stem upon the other side of the valve said valve bearing upon the inner surface of the end 36 of the valve casing. Extending around the valve stem is a spiral spring 44 one end of which spring bears on the valve plate 42 and the other end upon the inner surface of the end 39 of the valve casing. In the said end 39 is an air opening 45. In the concentric recesses 30 in the body portion 28 of the boxing and the concentric recess or depression 35 in the valve casing is an annular gasket or ring 46 preferably formed of rubber and circular in cross section which ring prevents the escape of air between the valve casing and the body portion 28 of the boxing and also permits the withdrawal of the valve casing. Upon the outer surface of the end 36 of the valve casing is an externally screw threaded nipple 47 extending around the valve opening 37 in said end.

In the ordinary use of the bed the valve casings and valves are in the position as shown in Fig. 2 so that pressure upon the air within the bed will draw the valves 37 inwardly upon one side of the bed and force the valve outwardly in the valve casings upon the other side of the bed. A body super imposed upon the bed and moved over the surface will depress the springs 17 of the bed and decrease the air space within the bed and the air forced in the direction of the sides of the bed will raise the valves 37 and find exit through the valve casing and the openings 45 this action being an indrawing upon one side of the bed and an expulsion upon the other side, so that a change of air is constantly taking place within the bed under customary usage. More or less resistance can be had to the freedom of entrance and exit of air by the adjustment of the valve 37 on the valve stems 41, so that end 39 of the valve casing may be moved inwardly upon the spring 44 thus making the spring stronger in its resistance. The bed may thus be cooled and its sanitary condition improved.

In order to fumigate the bed the valve casings 34 are removed from the boxings 27 in one side of the bed upon which the valve openings are directed inwardly and reversed in position and replaced the rubber gasket 48 being compressed within the recess 35 in the movement. The end of a hose 48 is connected with a tank 50, containing the fumes or gases under pressure. The gas liberated within the bed will penetrate the inner case the cotton batting and the bed cover, destroying the germs of disease and disinfecting the entire bed, the reversed valve casing 36 causing the gas slowly to penetrate the fibers of the bed. Compressed air which is sterilized by compression may be employed to expel odors and restore the bed to serviceable sanitary condition, permitting the air to escape through the valves in succession which may be opened by the hand. The concentric portion 32 of the boxing prevents lateral movement of the boxing and gives the same rigidity, Instead of the cotton batting upon the sides of the bed the bed cover may be increased in thickness and the proportionate size of the boxings made to suit the requirements for small or large valve casings.

Having fully described my invention what I now claim as new and desire to secure by Letters Patent is

1. A bed comprising a spring distended case and a cover having openings registering with each other, boxings within said openings secured at their inner ends to said case and at their outer ends to said cover and reversible valve cases within said boxings and spring actuated valves within said cases.

2. In a bed, a case spiral springs within said case, a cover extending over said case and fibrous material between said cover and case, said case and cover having openings in the sides registering with each other boxings within said openings secured to said case and cover, and reversible cases within said boxings having openings at the ends and spring actuated valves within said reversible cases.

3. In a bed a case, spiral springs within said case, a cover extending over said case and fibrous material between said cover and case, said case and cover having openings in the sides registering with each other, boxings within said case, means for securing the inner ends of said boxings within said case and devices upon their outer end for drawing inwardly the adjacent portions of the cover.

4. In a bed, a case spiral springs within said case a cover extending over said case, fibrous material between said case and cover, said case and cover having openings registering with each other, boxings within said openings having strips upon their inner ends adapted to be extended upon the inner surfaces of said case and a concentric portion of said boxing having prongs extending inwardly toward the cover.

5. In a bed comprising a case, spiral springs within said case, a cover extending over said case, fibrous filling material between said case and cover, said case and cover having openings in the sides registering with each other, boxings within said openings having strips adapted to be extended upon the inner surfaces of said case and a flange upon the outer end of said boxing and downward extension of said flange having prongs adapted to draw inwardly portions of the said cover.

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