

Feb. 5, 1952

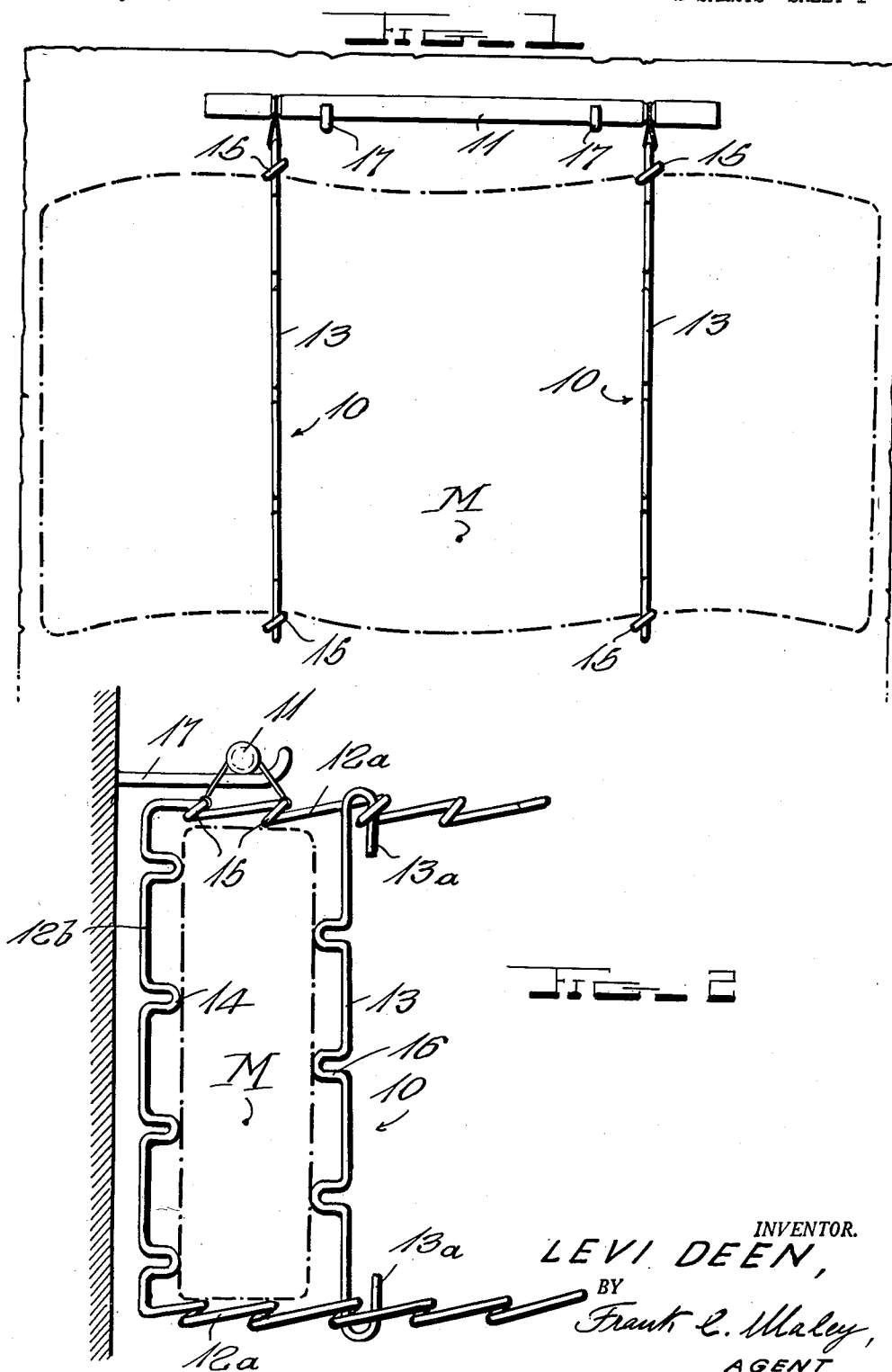
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2,584,792

MATTRESS CARRIER AND SUPPORT

Filed May 25, 1950

2 SHEETS—SHEET 1



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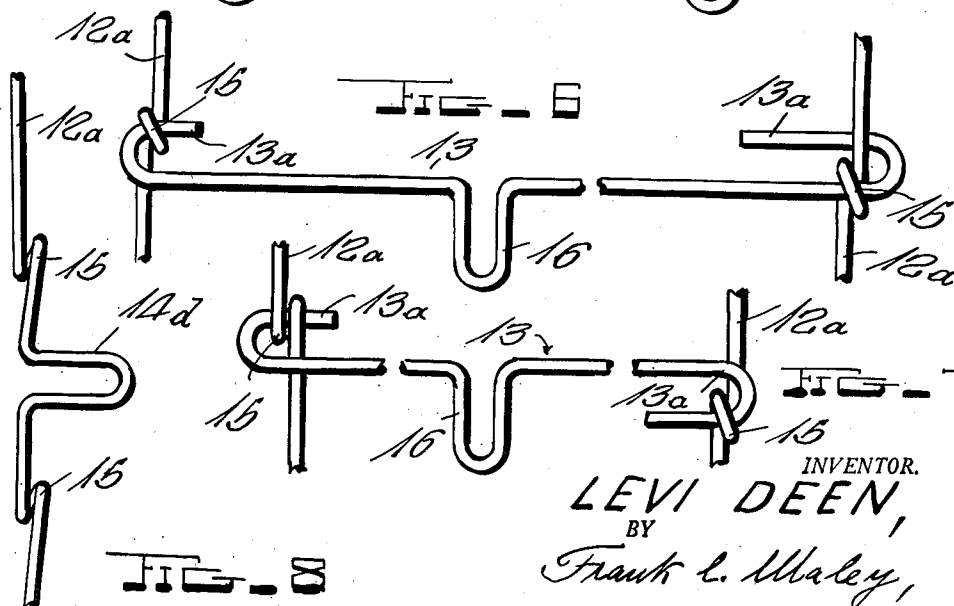
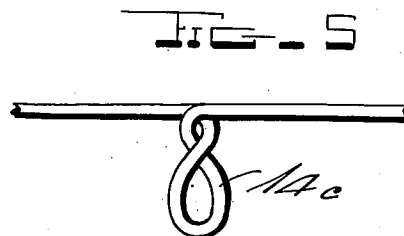
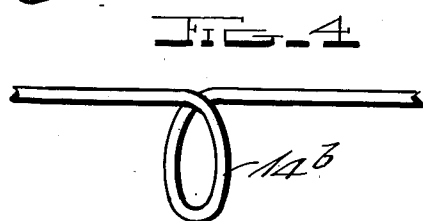
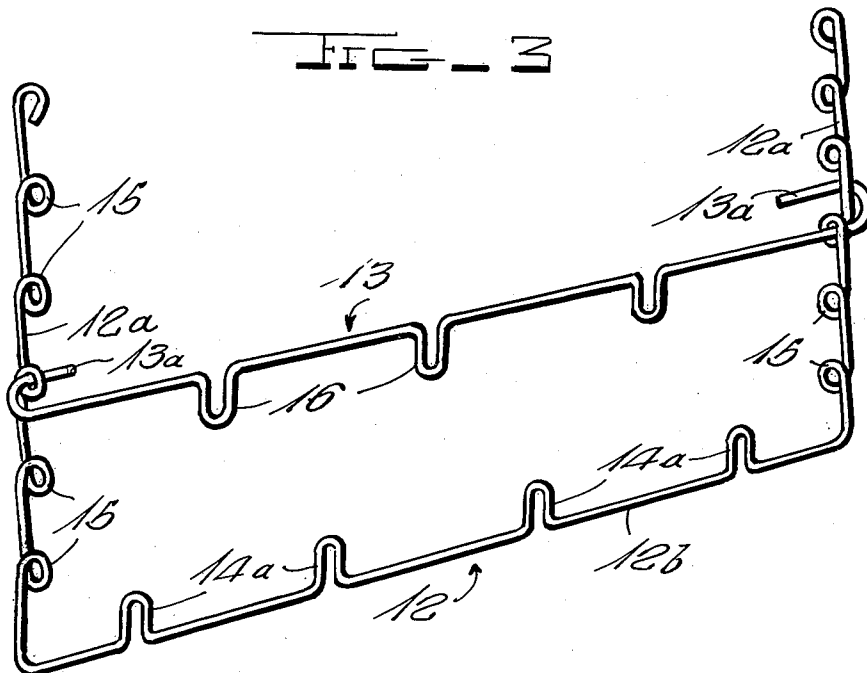
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2 SHEETS—SHEET 2



INVENTOR.
LEVI DEEN,
BY
Frank L. Maley,
AGENT

UNITED STATES PATENT OFFICE

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MATTRESS CARRIER AND SUPPORT

Levi Deen, Alma, Ga.

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4 Claims. (Cl. 211—28)

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This invention relates to mattress carriers and supports for airing purposes or the like, and has particular relation to an assembly of skeleton type readily positionable on the mattress, which forms an aid in the transfer of the mattress to and from its airing location and which is serviceable as a support therefor while being aired.

Mattresses, because of their structure, weight and dimensions, are more or less difficult to handle efficiently, due to the unwieldy dimensions and the non-rigid form of construction. Their construction permits yield during normal service conditions, and since the content which permits this is sufficiently yieldable under other conditions, the mattress is of somewhat limp characteristic but with sufficient stiffness as to tend to preserve its normal and desired shape, although it is capable of being moved into a loosely rolled formation.

Mattresses should be aired at frequent intervals, but their unwieldy nature makes it difficult for the housewife to provide the required manipulations in moving it from its position on the bed to and from a position where it can be efficiently aired and it is at times difficult to maintain it in an upright position for proper airing. In some sections, the practice has been to partially drape it over a clothesline, but while the mattress will be efficiently aired when so placed, the manipulations required to locate it at such point are extreme onerous, so that the tendency is to put off such airing as long as possible.

The present invention is designed to materially mitigate these difficulties by an assembly of the "take-down" type which can be readily applied to the mattress, and when applied will sufficiently stiffen the same as to permit it to be suspended with its width extending in vertical plane or possibly stood upright. The assembly is of wire and of skeleton form, thus adding but little weight to the weight of the mattress, and since the assembly includes a handle supporting member, the applied assembly will permit the mattress to be readily carried despite the large dimensions of the mattress.

The assembly is formed from a pair of sectional individual frame members, each having a section of U-shape contour and designed to embrace the bottom and side edges of the mattress, each member having a removable top section or member designed to be closed onto the top of the mattress. With the two structures in spaced applied positions in the length of the mattress, a connecting handle is secured to one of the sides

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of the two members, thus securing the members in position, the handle forming a convenient means for swinging the mattress over the shoulders for transportation as well as enabling the whole to be placed in a suspended position by being positioned on a suitable supporting means.

One of the specific features of the assemblage is provided by the formation of the several members in such manner that while the structure actually has a supporting relation to the positioned mattress, the actual contact on the mattress upper and lower faces is limited in extent. This result is obtained by forming the sections of the member with spaced loops extending toward the positioned mattress so that only the ends of the loops provide the actual contact, the spacing of the loops may be such that the loops will rest within tufted areas. Hence, although the frame members are of wire and thus offer but a small surface for contact, even this is limited through the use of the spaced loops, so that approximately the entire face of the mattress is exposed for airing, this including the lower side edge surface when the mattress is stood on edge for airing, loops retaining the mattress out of contact with the supporting ground surface. When the mattress is positioned in suspended position for airing, instead of being stood on the ground, the faces are exposed except for the small spaced areas represented by the ends of the contacting loops. In addition, whether the mattress be stood on edge or suspended, the mattress retains its planar normal shape, since the wire frame assembly, in applied position, provides an external support which tends to maintain such normal condition, since, when standing on the ground, the stiffness of the external assembly prevents the mattress weight from causing bowing or sagging of the body of the mattress.

With the pair of frame members applied and connected by the removable handle element, the latter offers an efficient means for raising the mattress bodily to a position over the back or shoulders to permit ready transportation of the mattress by a single individual, since the applied assemblage produces a unit which can be readily handled by power applied at one of its side edges.

The assemblage, being of the take-down type, can be readily applied, removed, and positioned for use or for storage, occupying but little space when assembled in its take-down condition. And since the assemblage comprises few parts and is formed of stiff wire capable of being bent into the desired formations, the assemblage can be manufactured and marketed at a reasonable cost.

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To these and other ends, therefore, the nature of which will be better understood as the invention is hereinafter disclosed, said invention consists in the improved constructions and combinations of parts as hereinafter more particularly described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the accompanying drawings, in which similar reference characters indicate similar parts in each of the views,

Figure 1 is a face view illustrating schematically an assembly-equipped mattress in suspended airing position.

Fig. 2 is a schematic end view of the parts shown in Fig. 1.

Fig. 3 is a perspective view of one of the frame members.

Fig. 4 is a detail elevation of a modified form of loop.

Fig. 5 is a detail of another modified form of loop.

Fig. 6 is a detail elevation of the end zones of a connecting member in mounted position, the view presenting the parts on an enlarged scale.

Fig. 7 is a similar view showing a modified form of member end zones.

Fig. 8 is a detail view showing a modified form of section leg.

The assembly is primarily made up of two sectional frame members 10, each of which is designed to embrace the mattress M in spaced relation, and a removable handle 11 secured to and connecting the pair of members, thus forming a skeleton assembly so positioned relative to the mattress as to form, with the positioned mattress, a unit capable of being readily carried about, and which can be suspended by mounting the handle on hooks or other suitable supports. The assembly, other than the handle, is formed of stiff but bendable wire and is, therefore, comparatively light in weight, of advantage during transportation, and offers a minimum of obstruction to the free access of air to the faces and edges of the mattress, thus enabling the latter to be efficiently aired when in the airing position.

Each of the frame members 10 is formed of two sections, section 12 being generally of U-shape contour, while section 13 is a connecting section or member designed to be removably secured to and to connect the opposite legs of section 12. In practice, section 12 is adapted to embrace the bottom and opposite side edges of the mattress, the legs being at the edges, while section 13 extends across the top of the mattress, these relations referring more particularly to the normal position of the mattress located in service position on a bed, the sections being applied to the mattress while the latter is so positioned. While a frame member may be fashioned in length dimensions to permit the frame to be applied lengthwise instead of transversely of the mattress, within the invention, it is preferred that they extend in the direction of the width of the mattress, since the latter is of less linear length, and therefore of less difficulty during transportation by an individual, it being possible to swing the unit on to the back or over the shoulders by the use of the handle, for individual transportation purposes.

Each section 12 includes the legs 12a and bottom connection 12b, these being arranged in the U-shape formation referred to, the connection 12b having an overall length but slightly greater than the width of the mattress. Legs 12a have

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a length materially greater than the thickness of the mattress, and thus materially greater than the width of the side edges of the mattress; the greater overall length of the legs is designed more particularly to increase the number of securing loops, presently referred to, for mounting section 13, thus permitting use of the assembly with mattresses of various thickness dimensions.

The connecting member 12b is provided with a spaced succession of loops 14 formed by bending the wire, these loops projecting toward the interior of the U-shape upwardly in connection with member 12b. Since mattresses are generally tufted, the spacing of the loops may be such as to correspond with the position of exposed tufts, the latter generally including a member of greater strength than that of the mattress covering. The loops are elongated, a form which permits the free end of the loop formation to provide the contact with the tuft end. The loops may be of open type (U-shape) as at 14a in Fig. 3, in which case the contact with the tuft will correspond in direction with the direction of length of member 12b, or they may be quasi-closed, as at 14b in Fig. 4, the loop being formed with a return-bend free end zone. Or the loops may be completely closed as at 14c in Fig. 5, by providing a twist of the wire at the base of the loop. With each form the contact of member 12b with the mattress is limited to the contact between the mattress and the free end zone of the respective loops.

The legs 12a also have a succession of spaced loops 15, these being approximately circular and extend or project in such direction that the axis of the loop, instead of the wall of the loop itself, extends toward the interior of the U-shape frame member. Loops 15 are designed to receive the hook end zones of section or member 13, as presently described, and the spacing normally is such as to permit such member 13 to be applied to mattresses which differ in thicknesses. The length of the legs and the number of loops may, therefore, be varied. The loops are formed by a return bend of the wire or in any other preferred manner. Normally, the legs of the frame member lie in proximity to the side edge of the mattress, especially where the airing of the mattress is by suspending action. However, it may be desirable to retain the legs spaced from the mattress, in which case one or more loops similar to loops 14 may be formed at spaced points on the legs, as between loops 15, such added loops projecting inwardly in similar manner to those of bottom connection 12b, the length of the latter being increased to compensate for the projected length of opposite loops when positioned in contact with the mattress. Such addition would permit standing the mattress on a side edge for airing purposes in case the ground surface were sufficiently hard to prevent sinking of the wire leg, the additional loops, indicated at 14d, then serving to maintain the edge of the mattress out of contact with the ground surface to permit airing of such edge.

The frame member is completed by a removable top member or section 13, this also being of wire formation and having a length to connect the opposite legs 12a of section 12. Member 13 also carries inwardly extending loops 16, similar to any of the forms of loops 14. Since member 13 is positioned over the mattress, with the loops extending inwardly in the direction of the mattress, it will be understood that the contact between the mattress and member 13 is limited to

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the projected ends of loops 16, the latter loops being elongated, thus providing similar airing conditions at the top face of the mattress as is present on the bottom face.

The opposite end zones of member 13 are bent into open hook form, as at 13a, the hooks being open inwardly, the shorter arm of the hook being designed to engage in one of the loops 15, generally entering the loop from one of the sides of the latter, the selected loop 15 being that which will bring the projected ends of loops 16 into proper engagement with the top face of the mattress. Since member 13 is located at the top of the mattress when the frame is being applied, the connection of the hook will be with a loop 15 present in the portion of leg 12a above the top of the mattress. Hence, it will be understood that the exposed portion of the leg can be sprung inwardly sufficiently to permit the ready entrance of the hook 13a into the loop 15 from the outside of the latter, thus placing the leg as positioned at the closed bottom portion of the hook. Since the hook is being applied while the legs are under tension, release of the latter serves to practically retain the hook in anchored position. In addition, where the mattress is being suspended for airing purposes, the legs will be retained in such position by the weight of the mattress on the lower leg while the upper leg is held by the handle, which is in its supporting position, the handle thus providing a resistance in opposition to the mattress weight.

The hooks 13a may both present their openings on the same side of the member, as in Fig. 6, or they may be formed to present their respective openings on opposite sides of the member, as in Fig. 7.

In the first form, the shorter portion of the hook is preferably above the shank, thus having both open ends of the hook positioned above the shank, the latter being part of the direction of length of member 13. The shorter portions of the hooks are preferably of different length, this being provided to permit the member to be positioned in the following manner: When the section 12 has been positioned relative to the mattress, with the excess of the leg length exposed above the mattress, section 13 is applied first to the proper loop of one of the legs by inserting the hook point into the loop from the inner side of the leg, section 13 extending laterally away from the leg at such time. The shorter arm of the hook is then advanced through the loop and around the closed end of the hook until the loop reaches the shank portion of the hook, the section or member 13 being swung to its position between the legs in providing such movements, thus placing the other hook adjacent the other leg. The latter leg is then sprung inward sufficient to permit the free end of the unsecured hook to enter the leg loop from the outer side, after which the return of the leg to its normal position causes the shorter arm to pass into and through the loop a distance sufficient to normally retain the section in position. The advantage of this regimen comes through the fact that the first applied hook is being carried by the shank of the hook and not by the shorter arm, so that should the leg which carries this end of the section be sprung inward, accidentally or otherwise, it will not disengage the hook, since the loop movement would be in the direction of length of the shank. To release this hook, the section must first be released at the opposite leg, and the section then swung to the outward position

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referred to to permit withdrawal of the hook, a reversal of the regimen above indicated.

Where the section hooks are positioned with their shorter arms on different sides of the section length, as in Fig. 7, the hook with the longer short arm is first entered from the outside of the loop, the section 13 being between the legs, with the shank side above, so that the hook opening is below the shank. The opposite leg is then sprung inward to permit the free end of the opposite hook entering the leg loop 15 from the outer side and with such free end uppermost, release of the leg then engaging the hook with the loop, the hook opening being above the shank. With this form, the loop is carried by the shorter portion of the hook in connection with both hooks.

The advantage of the sectional form of the assembly and of the frame members will be understood from the regimen used in applying the assembly to the mattress. With the latter in its position on the bed, one end of the mattress is raised and a U-shaped section 12 positioned by placing the bottom connection 12b below the under face of the mattress and with the legs extending in the direction of width of the side edges. The mattress end is then lowered on to the ends of the upstanding loops 14, the excess length of the legs projecting above the mattress. Member 13 is then applied to the upstanding legs, loops 16 extending downward and resting on the top face of the mattress, with the hooks 13a engaging in the proper loops 15 of the two legs, thus providing a mattress-embracing frame of wire preferably extending in the direction of width of the mattress. Similar action is then taken with the other end of the mattress by repeating the regimen with the second frame member, the two frame members being positioned in spaced apart and substantially parallel relationship, the positions preferably being such as to provide substantially equal spacing from the opposite ends of the mid-zone of the mattress, thus tending to provide a weight factor, approximately similar, in the opposite end zones of the mattress. With both frame members properly positioned, handle 11 is then secured to the legs of the frame members at one of the side edges of the mattress, suitable securing means, such as rope, twine or the like, being used for securing the end zones of the handle to the respective legs, the tying being so arranged that the tying medium will be properly secured to a leg in a manner as to locate the handle as approximately midway of the width of the side edge of the mattress, thus tending to provide an equality in the weight factor with respect to the handle. This completes assembling of the assemblage, with the frame members properly positioned, and the handle secured in position.

While the completion of the assembling operation thus described still leaves the mattress on the bed, the assembly has produced a change in conditions. Since the lower face of the mattress now rests on the upper contacting faces of loops 14, such lower mattress face has been raised from its contacting relation with the bed, at least in zones of which the frame members have a mid position. With the members properly spaced, any sag in the intermediate portion will be reduced if not eliminated, and the same is more or less true of the end zones. If sagging is sufficient to provide contact with the bed, such contact will be limited in extent. Hence, the applied assemblage actually has the effect of equip-

ping the under face of the mattress with a pair of metal runners, the bottom connections 12b, extending in the direction of width of the mattress, and which are supporting the mattress in such raised condition with the amount of contact with the bed greatly reduced, if not eliminated. This is of direct and positive advantage in the succeeding stage, since by grasping handle 11, the assembly with its embraced mattress can be readily drawn laterally over the bed, the major contact with the bed being provided by the wire runners 12b, making it possible to easily draw the mattress to the side of the bed and permit its being moved into position on the back or over the shoulder of the operator, thus enabling the entire assembly to be readily transported to the point of airing, whereby the use of suitable supports 17, such as spikes, hooks, brackets, or other form of support, the handle can be raised to a supporting relation on such supports with the mattress suspended.

Since the frame members are of wire and the contact between the members and the major faces of the mattress is limited to the outer ends of loops 14, it will be understood that practically the entire mattress face is exposed and in such manner that the air can circulate freely over such faces, thus providing the desired airing. While the side edges of the mattress may have an increased amount of contact, if the legs are not equipped with loops 14d, the actual contact is comparatively small in extent so that the side edges will also be properly aired.

As above pointed out, the legs of the frame sections 12 may also be provided with loops 14d. Where these are present, it is also possible to provide the mattress airing with similar legs of each section 12 resting on the ground, the loops 14d serving to space the side edge of the mattress from the supporting surface. This practice is not recommended where the supporting surface is of soft ground, since the small wire thickness would permit the leg to sink into the soft ground and permit the mattress edge to also reach contact. Where the supporting surface is of sufficient resistance to prevent such sinking, the addition of loops 14d to the legs 12a will permit the assemblage to be stood on the surface instead of being suspended.

As will be understood, after the airing has been completed, the mattress is returned to its service position by a reversal of the regimen above indicated, being removed from the support and transported to the bed and slid thereover, with the connecting members 12b serving as runners. Removal of the handle frees the frame members, after which removal of a connecting member 13, will permit removal of section 12 by simply raising its end of the mattress.

While the assemblage does not have stiffness sufficient to prevent the mattress from having sagging action during transportation, the assemblage is such as to reduce the extent of sagging thereof, due to the resistance the assemblage adds to the normal resistance of the mattress, and to this extent serves to protect the mattress. Since the dimensions of a mattress are such as to make it unwieldy to handle, if incapable of yielding, due to the difficulty of supporting the mattress in balanced position, while carrying the equipped mattress, the increased resistance afforded by the assemblage tends to retain the mattress against excessive bending or sagging and thus provides for easier transportation conditions.

It is apparent that the frame members may be formed to extend longitudinally of the mattress instead of transversely. The latter is preferred due to the fact that the mattress width is less than the length and hence is more readily handled, since the ability to position each frame member individually permits their spacing and positioning as to practically provide a balanced condition as respects the mattress length. Both directions are deemed to be within the purview of the invention.

The handle 11, generally in the form a wooden member of sufficient strength and which may be rod-like in form, has a length somewhat greater than the distance length between the pair of applied frame members, the handle having its end zones arranged to permit ready attachment to corresponding legs of the members applied to the mattress. Any desired form of mounting may be employed, a simple arrangement being to provide an annular groove in the end zone of the handle and within which may be placed the loop of a flexible connection, such as rope or twine, the free ends of which are then secured to the frame member leg.

While several forms of the assembly are herein disclosed, it will be understood that these are more or less illustrative and designed to illustrate the underlying features of the invention, since it is apparent that changes and/or modifications thereof may be found desirable in meeting the exigencies of service or the individual desires of a user. The right to make such changes and/or modifications found desirable or essential is, therefore, reserved insofar as the same may fall within the spirit and scope of the invention as expressed in the accompanying claims, when broadly construed.

I claim:

1. A mattress airing supporting assembly adapted to embrace a mattress in the direction of the width, said assembly comprising a pair of wire U-shaped sections with the legs of the sections formed with a succession of spaced circular loops, the connections between the legs having a succession of spaced apart projections, a pair of removable top connecting members having spaced apart projections intermediate their end zones and having a length to overlie the opposite faces of the mattress, hooks formed on the end zones of said top connecting members to engage with the loops of the U-shaped sections, the projections of said U-shaped sections and said top connecting members projecting inwardly of the embracing assembly formed by said sections and members to limit contact of the mattress to the areas provided by said projections, and a handle element removably secured to and connecting the U-shaped sections.

2. An assembly as in claim 1 characterized in that the respective projections are formed by shaping the wire into elongated loop like formations with the contact zone of the projection provided by the inner end of the loop.

3. An assembly as in claim 1 characterized in that the end zones of the top connecting member are of open hook form with the hooks opening inward, the axes of the leg loops extending in the direction of the interior of the U-shape member whereby the positioned hook will place loop walls as internal of the hook to thereby position the leg of the U-shaped member as internal of the closed end of the hook with the positioned top connecting member active to pre-

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vent spreading of the legs of the U-shaped member.

4. In an assembly of the class described, a wire frame member adapted to embrace a mattress in the direction of the mattress width, said member comprising a U-shaped section with the legs of the section overlying side edges of the mattress and being of a length greater than the thickness of the mattress, and a top connecting member for removably connecting the opposite legs of the U-shaped member, the connecting portion of the U-shaped section and the top connecting member each being formed with a succession of projections in spaced relation and projecting inwardly of the embracing formation

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formed of the section and member to thereby limit contact of the upper and lower faces of the positioned mattress with the frame member to the spaced areas provided by the inner end zones of the projections.

LEVI DEEN.

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The following references are of record in the file of this patent:

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