June 13, 1939. G. C. KIDWELL 2,162,021

HEATED MATTRESS

Original Filed Dec. 1, 1936 2 Sheets-Sheet 1

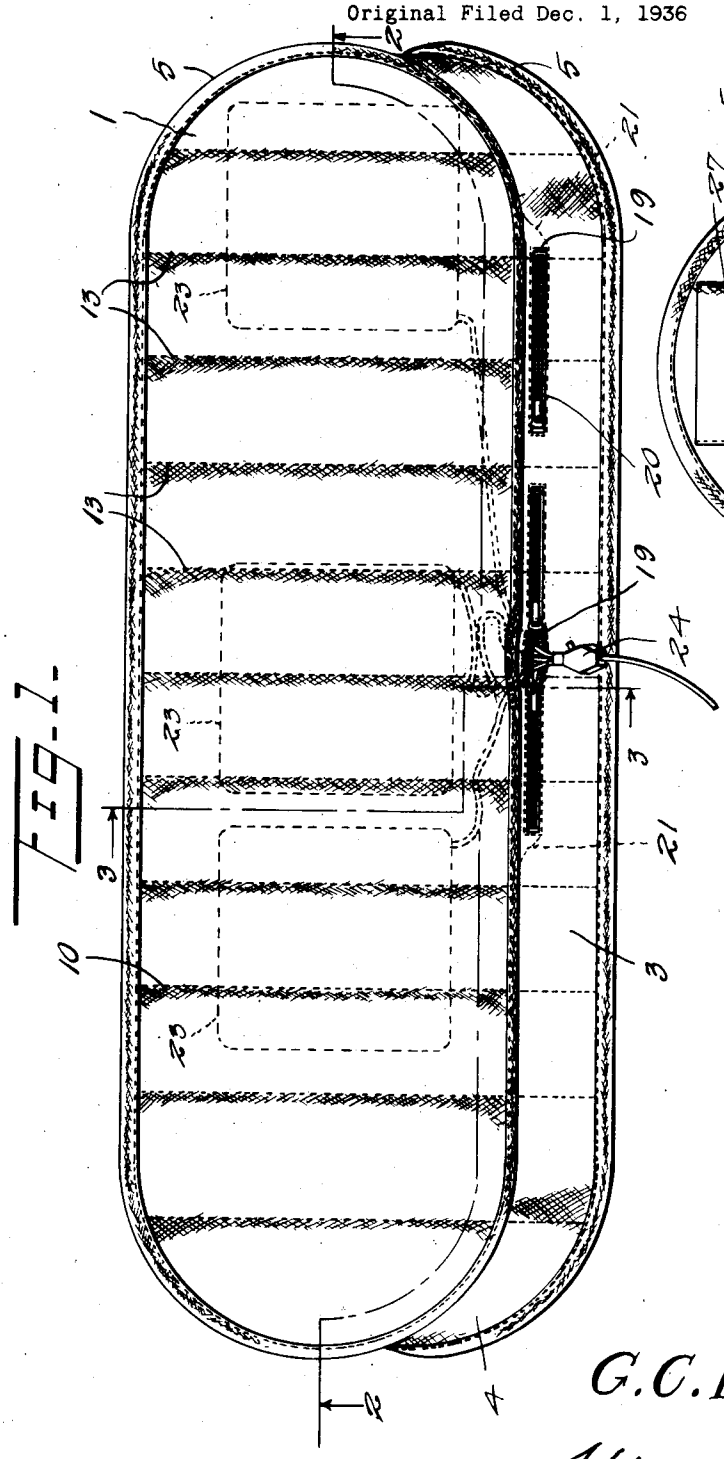


FIG. 1.

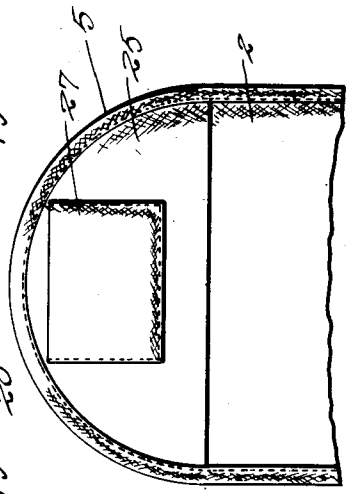


FIG. 5.

Inventor
G. C. Kidwell
By Watson E. Coleman
Attorney

June 13, 1939. G. C. KIDWELL 2,162,021

HEATED MATTRESS

Original Filed Dec. 1, 1936 2 Sheets-Sheet 2

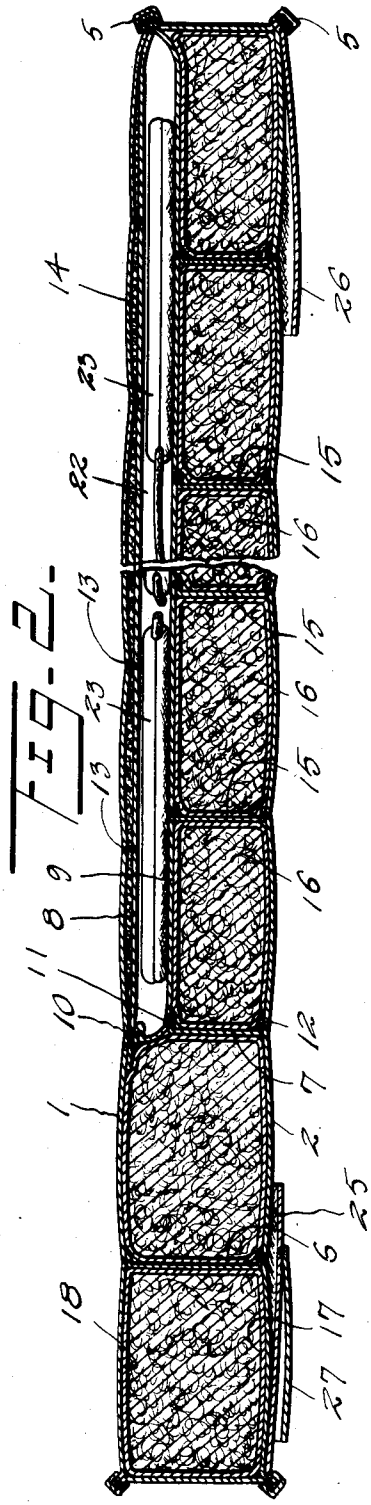


FIG. 2.

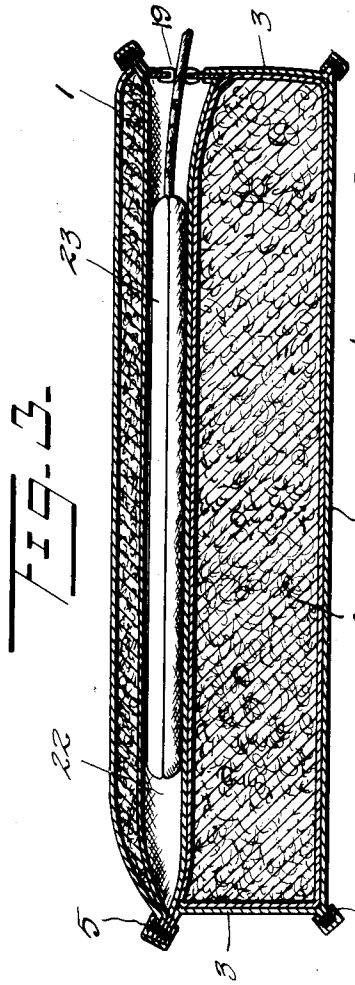


FIG. 3.

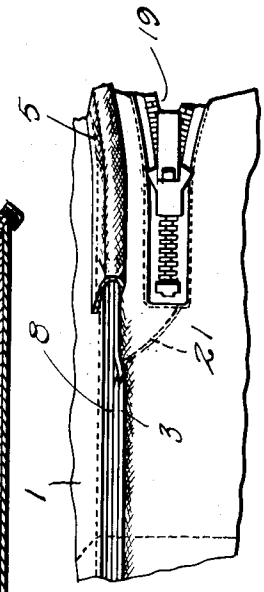


FIG. 4.

Inventor
G. C. Kidwell

By Watson E. Coleman
Attorney

Patented June 13, 1939 2,162,021

UNITED STATES PATENT OFFICE

2,162,021

HEATED MATTRESS

Grover C. Kidwell, Madison, Ind.

Application December 1, 1936, Serial No. 113,668
Renewed May 2, 1939

3 Claims. (Cl. 5—347)

This invention relates to improvements in mattress structures and pertains particularly to an improved mattress for use in ambulances or for other purposes where sick or invalid persons are to be taken care of.

The primary object of the present invention is to provide an improved mattress which is so designed that the same may be heated or cooled easily and quickly and will retain the heated or cooled condition over a relatively long period of time so that an invalid or sick person placed thereon may receive the benefit of such heating or cooling action.

Another object of the invention is to provide a mattress which is designed primarily for ambulance use and which has built thereinto in a novel manner a pocket in which may be placed heating pads or cooling devices for heating or cooling the mattress. The mattress is designed particularly for the use of heating pads and the pad-receiving pocket which forms an integral part thereof is separated from the top of the mattress by a relatively thin layer of insulating material provided with means for the slow passage of heated air from the pocket through the top and beneath the pocket is provided a thick layer of insulation material which will effectively prevent the loss of the heat through the bottom of the mattress.

A further object of the invention is to provide an improved mattress structure having a novel cellular design whereby it will maintain its shape and whereby the filling or stuffing material may be readily inserted or removed when it is necessary to clean the casing of the mattress.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a view in perspective of a mattress constructed in accordance with the present invention showing the use in association therewith of heating pads.

Fig. 2 is a longitudinal section on the line 2—2 of Fig. 1.

Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

Fig. 4 is a view in detail of a portion of an edge of the mattress showing the novel construction of a part of the same.

Fig. 5 is a underside view of one end of the mattress showing means for retaining the same in position on a bed or stretcher.

Referring now more particularly to the drawings, the numerals 1 and 2 designate the top and bottom covers or walls of the mattress body, while the numeral 3 designates the side walls and the end walls are designated by the numeral 4. The side and end walls of the mattress body are preferably formed of a continuous strip of fabric and the top and bottom edges of the fabric material from which the side and end walls are formed are joined with the side and end edges of the top and bottom walls, as illustrated in the sectional views of Figs. 2 and 3, and in addition to being stitched together in the usual manner, are reinforced by a suitable tape binding 5.

At the head end of the mattress there are disposed transversely thereof the vertical partitioning walls 6 and 7. These walls are secured at their end edges to the side walls 3 of the mattress body and the partition wall 6 is also secured at its top and bottom edges to the top and bottom walls 1 and 2, as illustrated in Fig. 2.

Interposed between the top and bottom walls and in parallel relation therewith are the two intermediate walls 8 and 9. The wall 8 lies above the wall 9, and these walls are brought together at their end edges as illustrated in Fig. 2, and at one end are secured between the top edge of one end wall of the mattress and the lower end edge of the top wall, as shown in Fig. 2, while along one side they are secured between the adjacent side edge of the top wall and the adjacent top edge of the side wall 3 as shown in Fig. 3. The edges of the intermediate walls 8 and 9 which lie adjacent the top or head of the mattress are secured together against the underside of the top wall 1 and to the latter as indicated at 10 and the seam here formed lies directly above the top edge of a second transverse partitioning wall 7. The top edge of this partitioning wall 7 is stitched, as indicated at 11, to the underside of the lower one of the intermediate walls, while its bottom edge is stitched to the bottom wall 2, as indicated at 12.

The area between the upper one of the intermediate walls and the top wall 1 is relatively shallow, and these walls 1 and 8 are stitched directly together transversely of the mattress body and at spaced intervals, as indicated at 13, and the area between these transverse stitchings

is filled with insulating stuffing material, preferably feathers. This material is indicated by the numeral 14.

Beneath the lower one of the intermediate walls there are disposed the transverse fabric partitioning walls 15 which have their top edges secured to the intermediate fabric wall 9 and their bottom edges to the bottom wall 2. As shown in Fig. 3 the ends of these intermediate walls are also stitched along vertical lines to the side walls 3. It will thus be seen that in addition to the shallow cells formed between the stitches 13 and the walls 8, there are also formed larger cells beneath the wall 9 which are indicated by the numeral 16, and between the attached end edges of the walls 8 and 9 and the head of the mattress structure are larger transverse cells 17. In each of these cells 16 and 17 there is placed a muslin bag which is indicated by the numeral 18, which is filled with feathers. In the side wall 3 opposite that wall to which the joined side edges of the walls 8 and 9 are secured, are formed two longitudinally extending pocket openings 19. One of these openings is disposed at approximately the transverse center of the mattress while the opening 19 is disposed adjacent the bottom or foot end thereof, and these openings are preferably closed by a fastening device of the "zipper" variety. The opening 19 adjacent the foot of the mattress has a single fastening unit while the other opening which is materially longer has two units which are closed over the ends toward the center so that the major portion of the opening may be closed leaving a small open portion intermediate the ends, as shown in Fig. 1. The side edges of the intermediate walls 8 and 9 which are upon the same side of the mattress as the openings 19, are secured between the joined edges of the top wall 1 and the side wall 3 from the head end to the point where the first or central opening 19 begins and at this point, as illustrated in Fig. 4 where the top binding tape 5 is broken away, the side edge of the lower intermediate wall 9 is led out from between the top edge of the adjacent side wall 3, and the adjacent edge of the upper intermediate wall 8 and carried across the inner side of the side wall 3 to the lower side of the central opening 19 and is stitched to the adjacent side wall 3, as indicated at 21. This edge of the wall 9 is then secured to the inner side of the adjacent side wall 3 to the far end of the second opening 19 and is then carried back to the stitched together edges of the top wall 1, the intermediate wall 8 and the top edge of the side wall 3. It will thus be seen that the edges of the walls 8 and 9 are separated from the head end of the first opening 19 to the foot end of the second opening so that when the fastening devices 20 are shifted to release the connected edges of these openings, access may be had to the area between the walls 8 and 9 which forms a pocket 22. In this pocket may be placed heating pads such as are indicated by the numeral 23 and the cords running thereto may be carried out from the pocket through the larger one of the two openings 19. There are here illustrated three pads coupled together at one side of a control switch 24 so that the entire length of the pocket may be heated when the switch is turned on. It will be understood, of course, that where conditions require it these pads may be replaced by cooling devices.

At the head end of the mattress, which is that portion lying between the line of stitching 10 and the adjacent end of the mattress structure, where the stuffing material of the mattress fills the areas entirely between the walls 1 and 2, the underside of the mattress is provided with a transversely extending pocket 25 which opens toward the rear or foot end of the mattress. At the foot end is a similar pocket which is indicated by the numeral 26, which opens in the opposite direction to the pocket 25. These pockets are provided to facilitate securing the mattress to a bed or stretcher by engaging the ends of the bed in these pockets, thus preventing the mattress from shifting thereon. There is also provided upon the underside of the head pocket 25 a second and smaller pocket 27 which opens toward the adjacent end and which is used as a convenient means for retaining articles which may be necessary to the occupant of the mattress.

In the use of the present mattress, assuming that the heating pads 23 are to be employed, these will be energized for a sufficient period before the mattress is to be occupied, so as to store up heat in the pocket and in the surrounding feather stuffing which is contained in the muslin bags 18 and in the cells at the top of the mattress between the transverse rows of stitching 13. Due to the great heat insulating qualities of feathers, this preliminary heating will be sufficient to keep the mattress warm for a period of several hours and this warmth will be very slowly given off to the body of the occupant mainly through the areas where the rows of stitching 13 are located. In the formation of these rows of stitching the fabric material forming the top wall 1 will naturally be punctured and these minute puncture holes will provide exit for the warm air stored up in the pocket of the mattress. Due to the relatively thin layer of stuffing material or feathers forming the top of the mattress over the top 23, a very slow dissipation of the heat may also occur but practically no heat will be lost downwardly because of the extremely thick formation of the cells lying beneath the pocket.

When the mattress is used in private ambulance work, the heating pads may be coupled up with a suitable source of current while the ambulance is in the garage, and the feather filling material of the mattress will maintain the same sufficiently warm while the ambulance is making a run, to supply heat and warmth to the body of a patient. It may also be found of advantage to provide the ambulance with a suitable generator so that for long trips the heating pads may be continuously supplied with the necessary current.

It has been found in actual practice that sick or injured persons do not need warmth beneath the head, and in fact it is sometimes found to be undesirable, therefore, the present mattress has been constructed with the head portion free of the heat pocket so that the heat will be concentrated beneath the body of the patient from an area adjacent the shoulders to the feet.

What is claimed:

1. A mattress, comprising a casing having top, bottom, side and end walls, a pair of spaced intermediate walls between and parallel with the top and bottom walls, said intermediate walls both being joined with one end wall and with both side walls, one side wall having a longitudinal opening cut therein between the intermediate walls providing access to the area between the intermediate walls, the said intermediate walls being joined together and to the top wall along a transverse line spaced from the other end wall of the casing, and stuffing material filling the casing and lying above and below the said inter-

mediate walls, said last walls together forming a pocket in the mattress body.

2. In a mattress, a casing body having top, bottom, end and side walls, one of said side walls having a pocket opening therein, a pocket forming means within the body and extending in a plane parallel with the top and bottom walls, said pocket forming means being secured along a side and an end edge to a side and end wall at the top of the walls, the other end edge of said means being secured to and across the top wall on a line spaced from the other end wall of the body, the other side edge of said means being serured to the other side wall of the body and having said opening leading thereinto, means for closing said opening, and a stuffing material filling the body and lying above and below the said pocket forming means.

3. In a mattress, a casing body having top, bottom, side and end walls, a pocket forming intermediate body between the top and bottom walls and having upper and lower walls, said pocket forming body extending the full width of the casing body and extending from one end to a transverse line located inwardly of the other end, the said upper and lower walls being joined together and to the casing top wall along said line, an opening formed through and longitudinally of one side wall and leading into said pocket body, said top and upper walls being stitched directly together across the mattress to form individual cells, dividing partition walls secured transversely of the casing body to form stuffing material cells, certain of said partitions being between the lower and bottom walls, and stuffing material filling each of the cells.

GROVER C. KIDWELL.