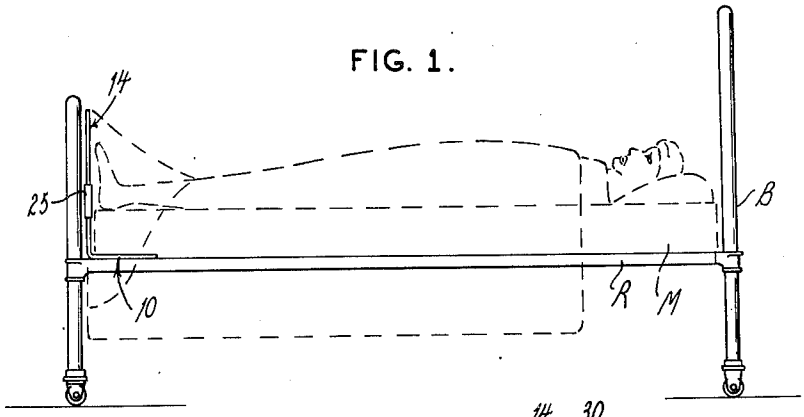
Nov. 25, 1952 I. G. KANE 2,618,789

BEDCOVER SUPPORT

Filed July 22, 1949

FIG. 1.



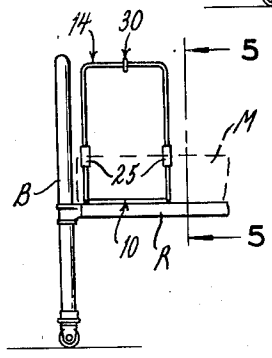


FIG. 4.

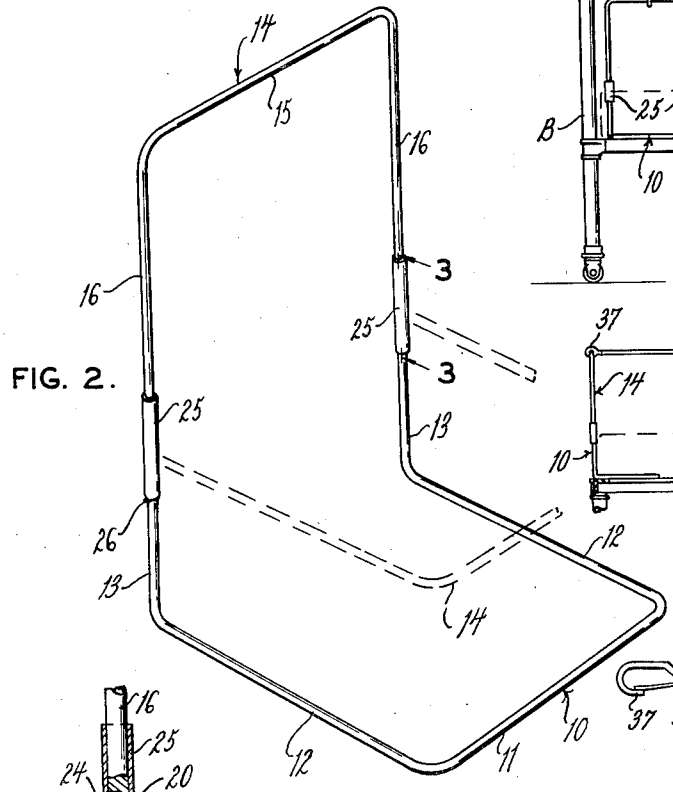


FIG. 2.

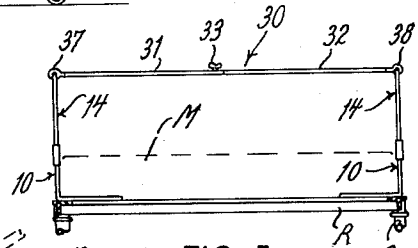


FIG. 5.

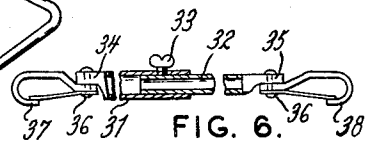


FIG. 6.

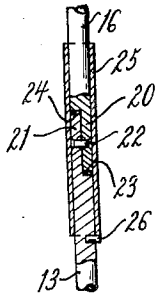


FIG. 3.

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BEDCOVER SUPPORT

Isabelle G. Kane, Edwardsville, Ill.

Application July 22, 1949, Serial No. 106,240

4 Claims. (Cl. 5—319)

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This invention relates to improvements in bed cover supports, and more particularly to a device for supporting a bed covering in an elevated position above the feet or legs of the occupant of the bed in such manner as to relieve any selected region of the lower limbs of pressure due to the weight of bedclothing, either for added personal comfort or for various therapeutic reasons, as in the case of an injured member.

This applicant is aware that certain devices have heretofore been designed for the general purpose of the present developments, but as far as is currently known, none of such devices is free of serious practical shortcomings which consist of partial failures to realize the aforesaid general purposes and objects, but in some cases the devices heretofore described are unnecessarily bulky, difficult of manipulation between a position of use and a retracted or folded position, or for other reasons have failed to attain a general availability to the trade for domestic and hospital usage. The avoidance of such former shortcomings accordingly constitutes the major objective realized by the current improvements.

The invention may be summarized by reference to its present embodiments as consisting of a light weight device, preferably of metal, which is positioned or anchored in or on a bed by reason of the loading of a mattress engaging a flat base portion of the device. It is further characterized by a hinged or pivoted, and hence retractible cover rest which, when erected, serves to support a portion of the bedclothing either in a marginal or corner zone of, or fully across the bed equipped with the device or a plurality thereof. In its most complete and advanced embodiment, the assembly may comprise a pair or more of individual foldable units for the purpose noted, together with an adjustable distance bar separably connected to and bridging such pair of units to afford maximum facility for meeting almost any desired purpose and position of such a multiple unit.

In addition to the general objective above stated, the cover supports of present design include a novel hinge between a base and a prop portion of a cover-supporting unit, together with a latch of improved simplified type for maintaining the device in an erected position of use.

A further and valuable objective of the present improvements consists in a distance piece or stay rod equipped with end connections of quick detachable type for functionally interconnecting a plurality of the individual, retractible units.

Other features of design preference objectively

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include a provision for adjustment in the length of a distance piece; a pivoted relation between the end connectors of the distance rod together with a general shaping and conformity of the various elements of the cover support such as to conduce to light weight and compactness of form to facilitate shipment, packaging and storage; a device which is characterized by rounded elements and corners throughout, whereby to avoid any hazard of snagging or tearing sheets, blankets and other elements of bedcovering, and a construction throughout which will conduce to thorough cleanliness, sanitation and freedom from any liability of rusting or staining the adjacent bedcovering materials.

The foregoing and numerous other objects and advantages will more clearly appear from the following detailed description of a presently preferred embodiment, particularly when considered in connection with the accompanying drawing, in which:

Fig. 1 is a side elevation somewhat diagrammatic in nature, of a bed, bed covering and occupant showing one position of the cover support when in use;

Fig. 2 is a somewhat enlarged elevation in perspective of one of the cover supporting units including present improvements, and showing in dotted lines a retracted position of the cover rest element;

Fig. 3 is an enlarged fragmentary longitudinal sectional view taken in the region of a pivotal connection between the cover rest and the base structure of the device, and showing a locking slide in position to maintain the cover rest in erected position, the location of Fig. 3 being indicated by line 3—3 of Fig. 2;

Fig. 4 is a fragmentary view similar to the foot portion of Fig. 1, showing the device as applied laterally of the bed and mattress, as same would appear when utilizing a pair of the units on opposite margins of the foot of the bed;

Fig. 5 is a view illustrating the use of a pair of units bridged by a distance rod, and as viewed along line 5—5 of Fig. 4, and

Fig. 6 is a view of the distance rod or tie bar, with connections and adjustment features.

Referring now by characters of reference to the drawing, in Fig. 1 is shown a bed B which may be of conventional type and includes, together with the usual rails R, the head, foot and other usual portions of bed structure, a mattress M resting upon the spring frame or the like, of which the rails R may form a part.

In the preferred form of the device the as-

sembly of each unit includes a U-shaped base generally indicated at 10, and which consists of a bridge element 11 and side bars 12, the otherwise free ends of the members 12 being turned upwardly so as to constitute a pair of substantially vertical extensions 13. The base 10, comprised of elements 11, 12 and 13, is brought to a position of usage by inserting the horizontal members 11—12 just below the mattress M, specifically beneath a marginal portion of the mattress, and by preference in such manner that the members or extensions 13 will project vertically alongside the end or a side margin of the mattress and parallel thereto. In this manner the weight of the mattress and usually the loading imposed thereon as by weight of the occupant, will effectively maintain the cover support unit in about the position shown by Fig. 1, by way of example.

In the embodiment shown, the cover rest proper consists of an inverted arch or U-shaped element generally indicated at 14, and consisting of a bridge piece 15 together with side arms 16. The portions 15 and 16 are connected through smooth wide bend zones similarly to the analogous portions of the base 10, and as a preference but without restriction, the subassemblies 10 and 14 may be formed of an aluminum rod stock, say of one-quarter inch diameter and substantially of circular section. The selection of aluminum enables, as may be desired, a plated finish, or with some production economy, the omission of any finish, still without hazards of staining or rusting the bedclothing.

Assuming a metal rod stock of circular section to constitute the base and cover rest as described, it is preferred to connect hingedly or pivotally, the member 14 to the member 13, whereby to enable retraction or folding actuation of the cover rest between periods of usage. To this end, a hinge or pivot serves to connect each of the vertical extensions 13 with an adjacent side arm 16, such pivot being constituted by reducing as in the region 20, the lower end portion of each arm 16, to a half circular section, and similarly forming the upper end of each adjacent extension 13, as indicated at 21. The portions 20 and 21 are transversely apertured to receive a pivot pin 22 and in the formation of the reduced ends 20—21, each of the parts 13 and 16 is provided with a sloping ledge, shoulder or abutment, as indicated at 23 on member 13, and 24 on member 16. These shoulders coact with the adjacent end faces of the reduced portions 20 and 21 so as to limit definitely the raising or erecting movement of assembly 14 to the vertical, as shown by Fig. 2.

It has been found desirable to provide a form of locking slide for maintaining the hinged or pivoted sections in vertical position as shown by Fig. 2, in order to prevent unintended or casual retraction of the cover rest under the weight of the bedclothing supported at an abnormal height thereby. A suitably rugged and low-cost form of locking slide is indicated at 25, and consists of a short length of metal tubing, aluminum for example, which is of an internal diameter slightly greater than the external diameter of the rod stock forming members 13 and 16. In this manner the locking slides may be moved freely along and over these elements, the two tubular slides being normally carried by the arms 16, one slide on each thereof. Thus when the member 14 is raised to the vertical, the freely dropping tubular slides 25 will fall, solely by gravity, one moving downwardly along each arm 16 until arrested in such movement. A limiting provision of this order consists of a short pin 26 press fit into a recess in the adjacent vertical section 13.

As will now be obvious and as indicated by the dotted lines of member 14 (Fig. 2), assuming the member 14 to be lying flat upon and parallel to the top of the mattress beneath the bedcovering as made up over the unit, the bail or cover rest proper may be elevated by moving same through a range of about ninety degrees, following which, due to the gravity action of the locking slides 25, it will be maintained in erected position until intentionally released therefrom since the tubular members 25 will fall to a position as shown by Fig. 3, in which the slide fully embraces the pivot zone. When it is again desired to retract the cover support, the tubes may be easily manually or otherwise lifted so that they clear the hinge or pivot structure described, thus again permitting the cover rest to be folded or retracted to a horizontal position over the top of the mattress or usually more accurately, over the top of the lowermost sheet element of the bedcovering.

In order best to assure the assembly an unobtrusive position when retracted, and to interfere as little as possible with a smooth and orderly makeup of bed, it is preferred that the vertical dimension of the extensions 13 up to the hinge zone of each, correspond substantially to the thickness or depth of the mattress M. As may be desired, it will now be obvious that the members 13 may consist in their upper portions, of tubular elements (not shown), telescopically related to short vertical projections of the base 10, thereby enabling an adjustment in height for the purpose noted, of the hinge zones above the plane of base 10.

The description thus far has related to a single foldable or retractible unit of a light weight compact character, for the purpose noted. It has, however, been found to enhance greatly the usefulness in certain fields of therapeutic usage, to extend the present facilities for multiple use of such units. In the present example, the versatility and adaptability of multiple units are greatly enhanced by the use of a tie rod or distance piece generally indicated at 30. In a most advanced form the distance rod 30 consists of two or more telescoping sections 31 and 32 which may frictionally interfit to a degree such as satisfactorily to maintain any predetermined length adjustment, or if desired, the larger section 31 may be provided with a wing screw 33 to maintain more positively the desired length setting of the member 30. It is preferred to form the distance rod of tubular stock, with the ends thereof somewhat flattened as indicated at 34 on the member 31, and at 35 on the member 32. Each of these flattened ends is apertured for the reception of an assembly rivet 36 which extends through a suitable aperture in one end of a snap fitting 37 constituting a quick detachable or snap-on connection between the distance rod 30 and one of the pair of supporting units engaged by the rod, specifically the bridge element 15 of the cover support of each such unit when erected.

It is preferable that the relation between the snap connection and the end of the adjacent section of the distance rod be characterized by a substantial frictional relation, so that the connection may be set at and yet retain any desired angle with the longitudinal axis of the rod 30. Thus if the connection 37 at one end, and a similar connection 38 at the opposite end of the distance rod, be turned so as to lie along the

produced axis of member 30, a pair of the units may be located as shown by Fig. 5 with each unit of this pair adjacent the lateral margin of the foot portion of the mattress M and with the distance rod 30 constituting a full width bridge over the foot part of the bed, thus making the covers entirely free of contact with the feet or toes of the occupant. Similarly this twin unit with distance rod may be moved toward the head, so as to shield any particular region of the body against the loading of the bedclothing.

The provision of a swivel connection such as constituted by the flattened portion of each connector and the adjacent end of the tie rod or distance piece, enable, as is sometimes desired, the location of one of the supporting units under an end of the mattress with a companion unit under a side of the mattress, in which case the tie bar or rod 30 will extend diagonally of, or across the corner of a bed. The swivel connections as described thus greatly augment the possibilities for varying the angular disposition of the multiple units, while the length adjustment, due to the telescoping construction of the tie rod, provides almost limitless possibilities of variably spacing a pair of the units.

It has been found that the devices as described are capable of many normal and therapeutic uses in addition to those described. For example, it has been found that with the aid of a simple form of clamp, a therapeutic lamp, such as an infra red fixture, may be readily attached as by a spring clamp, to the bridge bar 15 of one of the units, thus affording, besides the direct cover supporting function, excellent facilities for various kinds of radiant therapy, and as may be desired, with a safe heat-retention feature when thus used beneath the covering.

It will now have appeared that the device as described will fully realize the several objects above expressed, as well as others now apparent from the more detailed description.

Although the invention has been described by detailed reference to preferred embodiments, such detail of description should be understood as instructive, rather than as limiting in any sense the full intended scope of the invention, numerous variants both of structure and arrangement being possible within the scope of the claims hereunto appended.

I claim as my invention:

1. In a device for elevating an extended marginal portion of a bed covering above the normal mattress level, a pair of units normally spaced along a mattress, each said unit including a base adapted for insertion below a mattress, and a bed cover support carried by the base, and extended to a height above the mattress, a distance rod bridging and spacing a pair of said units, length-adjustment means on and for said rod, and a connection of a quick-detachable type at each end of the distance rod, each said connection being pivotally related to the adjacent end of the rod, and detachably secured to one of said units.

2. In a device for elevating a marginal portion of a bed covering over a mattress, a normally horizontal base formed of a length of metal rod stock, the base being formed as a substantially U-shaped member, the outer end portions of the arms of which are substantially vertically upturned to extend along the margin of a mattress, each vertical outer end portion of said base being provided with a reduced end portion of semicircular section, a cover support formed of a metal rod stock and being in the form of an inverted U-shaped member, and of a width substantially equal to that of said U-shaped base portion, the opposite arms of the cover support being provided with similarly formed reduced end portions of semicircular section, the companion reduced end portions of semi-circular section of the base and cover support interfitting in overlapping relation to provide a hinge, a pivot pin connecting each pair of said companion formed reduced end portions, the reduced portions being provided with shoulders formed in each said zone of pivotal connection, said shoulders coacting to prevent pivotal movement of the cover support beyond the vertical, as said support is moved from a folded position to a fully extended position, the vertical outer end portions of said base being of a length as to permit the cover support to overlie horizontally a mattress when said support is in a folded position, a tubular slide carried by each of the arms of the cover support, and movable by gravity into overlying and embracing relation to the hinge when the arms of said support are brought to a vertical position determined by said shoulders, the tubular slide preventing casual pivotal movement of the cover support from the operative vertical position, and a projection carried by each of said vertical outer end portions of the base below the hinge, the projections serving to limit the movement and fix the bottom position of the adjacent tubular slides when each said slide is in a locking position.

3. In a device for elevating a marginal portion of a bed covering, a pair of units each including a base portion adapted for insertion below a mattress, and a substantially vertical portion extended upwardly of, and carried by the base for support of a marginal part of a bed covering at a distance above the mattress, a distance piece bridging the pair of said units, means for detachably connecting the distance piece to one of said units, and means enabling an adjustment in effective length of the distance piece.

4. In a device for elevating a marginal portion of a bed covering, a pair of foldable units each including a base portion adapted for insertion below a mattress, a substantially vertical portion extended upwardly of, and carried by the base, and a cover support pivotally secured to said vertical portion for support of a marginal part of a bed covering at a distance above the mattress, a distance piece bridging the pair of said units, means for detachably connecting the distance piece to one of said units, and means enabling an adjustment in effective length of the distance piece.

ISABELLE G. KANE.

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