Aug. 7, 1951 P. DOANE 2,563,399

COLLAPSIBLE TOP ENCLOSURE FOR BEDS

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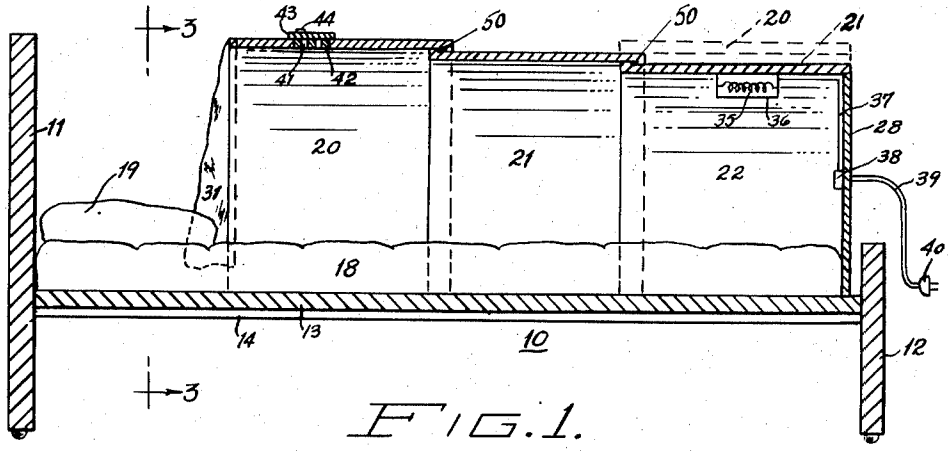


FIG. 1.

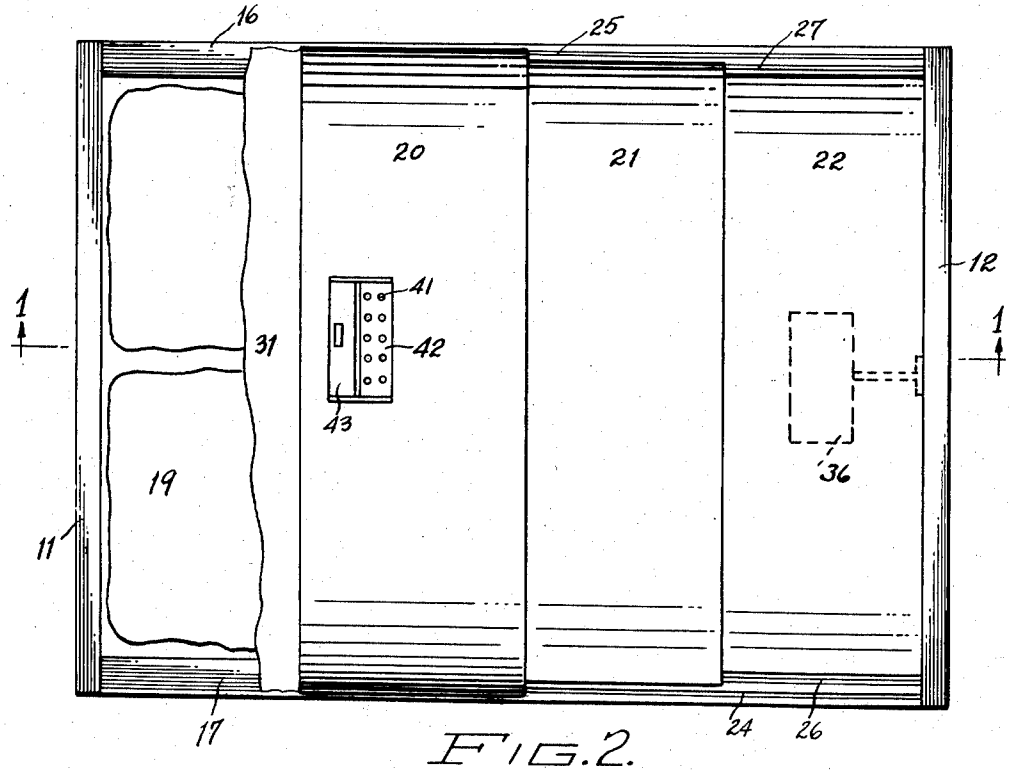


FIG. 2.

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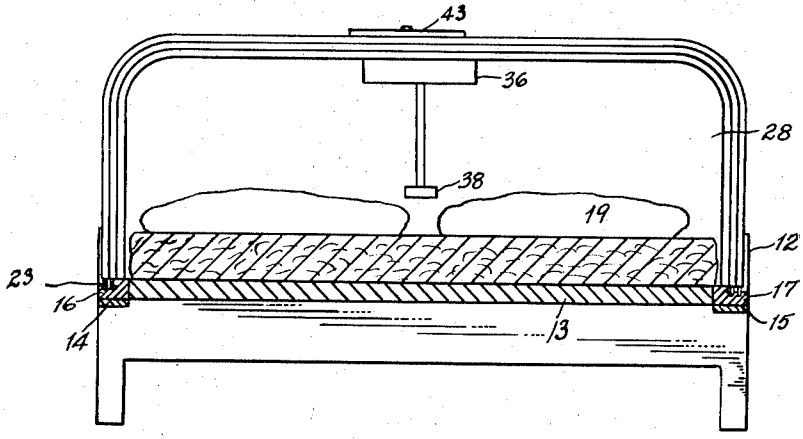
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FIG. 3.



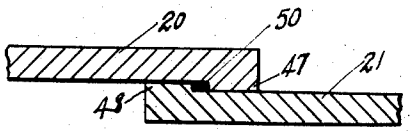


FIG. 4.

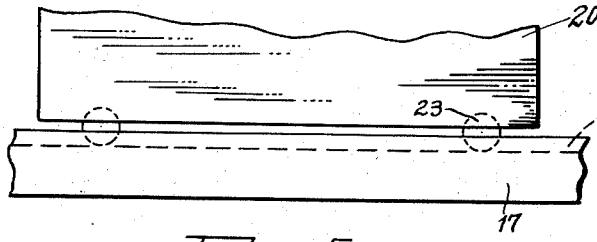


FIG. 5.

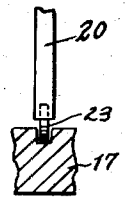


FIG. 6.

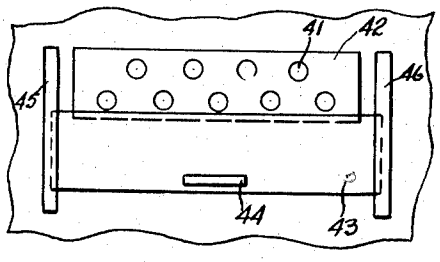


FIG. 7.

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COLLAPSIBLE TOP ENCLOSURE FOR BEDS

Paul Doane, Windsor, N. Y.

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2 Claims. (Cl. 5—334)

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This invention relates to beds and more particularly to a bed having an elevated structure serving or supplanting the conventional bed covers.

As far as I am aware, bed canopies constructed according to prior methods have been bulky, space-consuming and generally clumsy as regards their operation and use. In solid or rigid type bed canopies, the problem of providing a structure permitting convenient entry or leaving has been troublesome. In some cases, the canopy has been constructed so as to swing on a laterally disposed hinge. This practice amplified the space requirements of the canopy and was therefore objectionable. Furthermore, a pronounced defect in many of these rigid canopy structures was the limitation on access they imposed. For example, if a patient requiring medical treatment was occupying the bed, the canopy would provide a physical barrier against examination of the patient by a doctor or the application of therapeutic heat treatments such as from ultraviolet lamps disposed adjacent the bed. It may also be pointed out that apart from such medical uses, it is often desirable that such access to the bed be convenient, such as for sun-bathing or other like purposes.

Bearing the foregoing in mind, it is an object of the present invention to provide a bed-canopy combination wherein the canopy construction is simple, easily operated and has minimum space requirements.

Another object of this invention is to produce such a bed-canopy combination in which the canopy interferes as little as possible with access to the bed so as to facilitate making up the bed, airing it, or permitting convenient entry or leaving.

A further object of this invention is to produce a canopy for a bed which can be adapted for use with standard or presently existing beds. Thus, the canopy can be pre-fabricated and may be installed by a user on a bed which was not specifically intended for that purpose.

Other objects of my invention will be apparent from the following description, it being understood that the above general statements of the objects of my invention are intended to describe and not to limit it in any manner.

Referring to the drawings:

Fig. 1 is a longitudinal cross section taken along the line 1—1 of Fig. 2.

Fig. 2 is a top plan view.

Fig. 3 is a section taken along the lines 3—3 of Fig. 1 with the neck drape removed.

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Fig. 4 is a fragmentary cross sectional view illustrating the slide limiting system of the canopy sections.

Fig. 5 is a fragmentary view illustrating the roller track arrangement of the canopy sections.

Fig. 6 is a fragmentary view illustrating the rolling action of one of the canopy sections in its track.

Fig. 7 is a fragmentary view of the air vent for the bed canopy.

The bed 10 generally follows the conventional forms thereof and comprises a head board 11, a foot board 12, and a mattress supporting area in which is disposed the mattress support 13. The support 13 may include springs or any similar means of resiliently supporting the mattress if desired. The mattress supporting area includes both head rest and body rest portions as is conventional.

The bed structure per se includes the side rails 14 and 15 which in the ordinary use of the bed are usually intended to support a bed spring. In the present instance, however, they support the track members 16 and 17 upon which roll the movable canopy sections, as will be hereinafter described. The connection of side rails 14 and 15 to the head and foot boards respectively is conventional. A mattress 18 which rests upon the support 13 is provided, as are the usual pillows 19. As illustrated, mattress support 13 may be integral with members 16 and 17 if desired, although if springs are provided therein, the support 13 can be adapted for this purpose.

The elevated, enclosing canopy structure includes three discrete telescoping sections 20, 21 and 22. The canopy sections are dome-shaped and may be made of aluminum, wood or like material. Canopy section 22 is enclosed by wall 28 at its rearward end and remains in a fixed position across the bed, its edges or sides resting on the members 16 and 17. Canopy sections 20 and 21 are slidable in respect to each other and to canopy section 22. Pursuant to this purpose, rollers 23 are provided on each side of the movable canopy sections and tracks are formed in members 16 and 17 which are adapted to receive the rollers 23. Thus, track 24 serves the rollers 23 of front canopy section 20 on one side thereof, while track 25 serves its rollers on the other side. Center canopy section 21 rolls on one side thereof in track 26 and on the other side thereof in track 27. It will be apparent, therefore, that the movable canopy sections can be retracted longitudinally into a nested relationship wherein the three canopy sections are completely telescoped and rel-

atively superimposed in the area of fixed canopy section 22. Thus, in their normal longitudinal relationship they cover or enclose the greater part of the mattress supporting area represented by the body rest portion thereof, whereas in the retracted position they cover only the section wherein is disposed the fixed canopy section 22 since the movable sections are telescoped thereover. In this position, more than one-half, and actually only one quarter of the bed is covered. It is apparent, moreover, that should more movable sections be provided, the permanently covered area can be decreased.

As illustrated in Fig. 3, the foot board 12 serves as a limit for inward telescoping of the canopy sections, while outward telescoping movement is limited by the enlarged ends 47 and 48 formed around the contacting edges of the canopy sections.

When the canopy structure is in its operative or extended condition, it supplants the usual bed covers and eliminates disadvantages thereof. For example, the pressure of bed clothes upon an occupant of the bed is avoided, as is the disturbance of one occupant of a double bed when the other occupant shifts the bed covers. In addition, a saving in bed linen and blankets is also effected.

In order to cover the front opening of movable canopy section 29, a neck drape 31 is connected around the outer edge thereof and permitted to hang downwardly so that it may drape itself around the neck of the occupants. The drape or curtain 31 thus serves as a form of flexible seal for the bed canopy.

I have found that an arrangement such as described above is effective in maintaining the occupant of the bed warm, even without auxiliary heat. However, it may be desirable to provide such heat for persons having particular requirements or in the event that it is desired to preheat the bed prior to its occupancy. Accordingly, there is provided an electric heater coil 35 which may be housed in a suitable enclosure 36. Operating current therefor is provided through wires 37 in conjunction with a bimetallic or similar type of thermostat 38 which is arranged to provide a regulated degree of heat from the heater coil 35. The thermostat arrangement is conventional and need not be discussed herein, it being understood that the temperature within the enclosure will control its operation. A pair of electrical lead wires 39 is provided with the usual plug 40 so that current may be fed to the heater coil 35. If desired, a simple electric light bulb, infra red, or any similar appliance, may be utilized instead of the heater coil described.

Openings 41 formed in a block 42 provided in canopy section 20 serve to assist in the circulation of air in the canopy. Referring to Fig. 7, a slidable shutter 43 having an operating handle 44, is arranged to slide in tracks 45 and 46, arranged longitudinally on the canopy section 20. When operating handle 44 is withdrawn to the position shown in Fig. 7, the openings 41 are free to admit air into the canopy structure. When the operating handle 44 is pushed back to cover the openings 41 by the shutter 43, as illustrated in Fig. 1, the air therethrough will be cut off from the canopy. Intermediate stages may be effected by regulating the position of shutter 43. For more effective sealing of the canopy, the sections are provided with enlarged ends 47 and 48 which substantially nest against each other in the closed position, as illustrated in Fig. 4. On the contacting walls of the respective enlarged ends are disposed pads of felt or similar heat insulating members 50.

It will be seen from the foregoing that a collapsible although rigid bed canopy has been provided which permits access to the major portion of the bed by merely rolling the canopy sections toward the foot thereof so that they occupy the position shown in the dotted lines of Fig. 1. Thus, the unwieldy and bulky mechanisms of prior devices have been eliminated and a structure has been provided which can be collapsed in situ whenever the occasion requires and can be restored to operation by a very simple movement. The advantages of such construction are particularly marked in connection with making up or airing the bed without the considerable difficulties encountered with prior bulky devices which often required removal or displacement of the entire structure. The advantages of access for therapeutic applications to an applicant are obvious. In addition, the enclosure is capable of maintaining the desired temperature and air conditions when in the extended condition.

I have shown a preferred embodiment of my invention, but it is obvious that numerous changes and ommissions may be made therefrom without departing from its spirit. For example, it is feasible to slide the canopy sections back on metal runners instead of rollers and the required changes therefor are both slight and apparent. In either embodiment, the canopy is supported by gravitational action and it can be removed entirely, if desired, without unfastening hinges, screws, etc. Similarly, it can be replaced with equal facility. If desired, the canopy material may be formed of plastic or heat insulating materials.

I claim:

1. A bed including a mattress supporting area and an elevated enclosing structure maintained over said mattress supporting area, said enclosure comprising a plurality of discrete relatively movable sections, said sections having a normal position wherein the greater part of said mattress supporting area is covered thereby, rollers on some of said sections, means on said bed for supporting said rollers, said sections provided with rollers being movable on said rollers towards one end of said mattress supporting area so as to reduce the part of said mattress supporting area covered thereby, one of said sections being disposed adjacent to and over said one end of said mattress supporting area, an end wall on said one section, all the remaining sections having open ends whereby an occupant of the bed may enter the structure through the foremost of said remaining sections, and a flexible drape over the front open end of said foremost remaining section whereby the structure is enclosed at one end by said one section end wall and at the other end by said flexible drape.

2. A bed including a head board, a foot board and side rails maintained between said boards, a mattress supporting area between said side rails, a pair of tracked members respectively supported by each of said side rails, an elevated dome-shaped enclosure supported by said tracked members so as to be maintained over said mattress supporting area, said enclosure comprising a plurality of relatively movable sections, said sections having a normal longitudinal relationship wherein the greater part of said mattress supporting area is covered thereby, rollers on at least two of said sections and disposed in tracks of said tracked members whereby said two sections may

be rolled towards one end of said mattress supporting area so as to modify said normal longitudinal relationship of said sections, said modification being effective in uncovering the greater portion of said mattress supporting area, one of said sections normally remaining adjacent the rear of the bed, and an end wall on said one section and immediately adjacent said rear, all of said sections communicating with each other and the front section being open at its end whereby an occupant may enter said enclosure through said front section.

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