

Nov. 28, 1933.

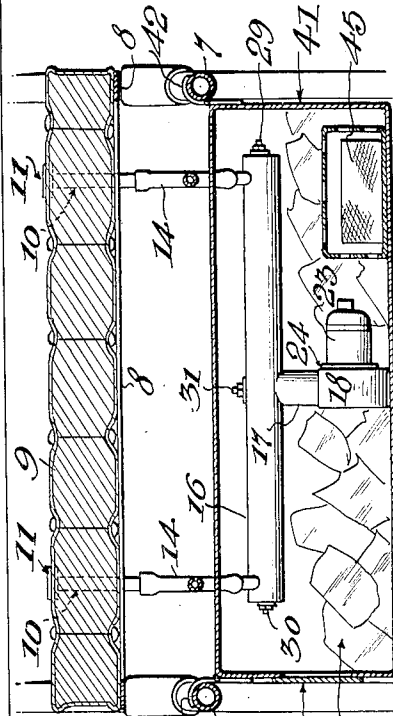
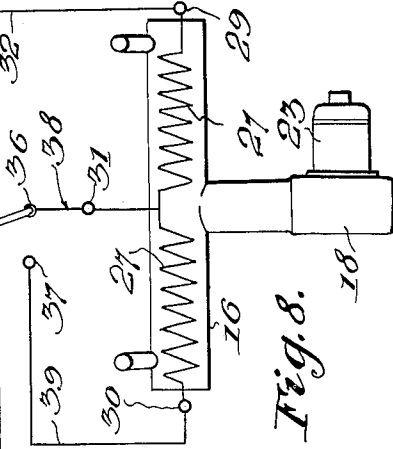
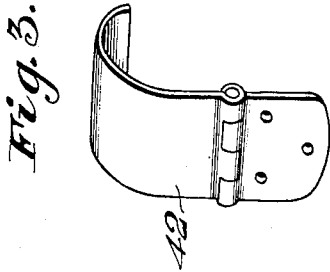
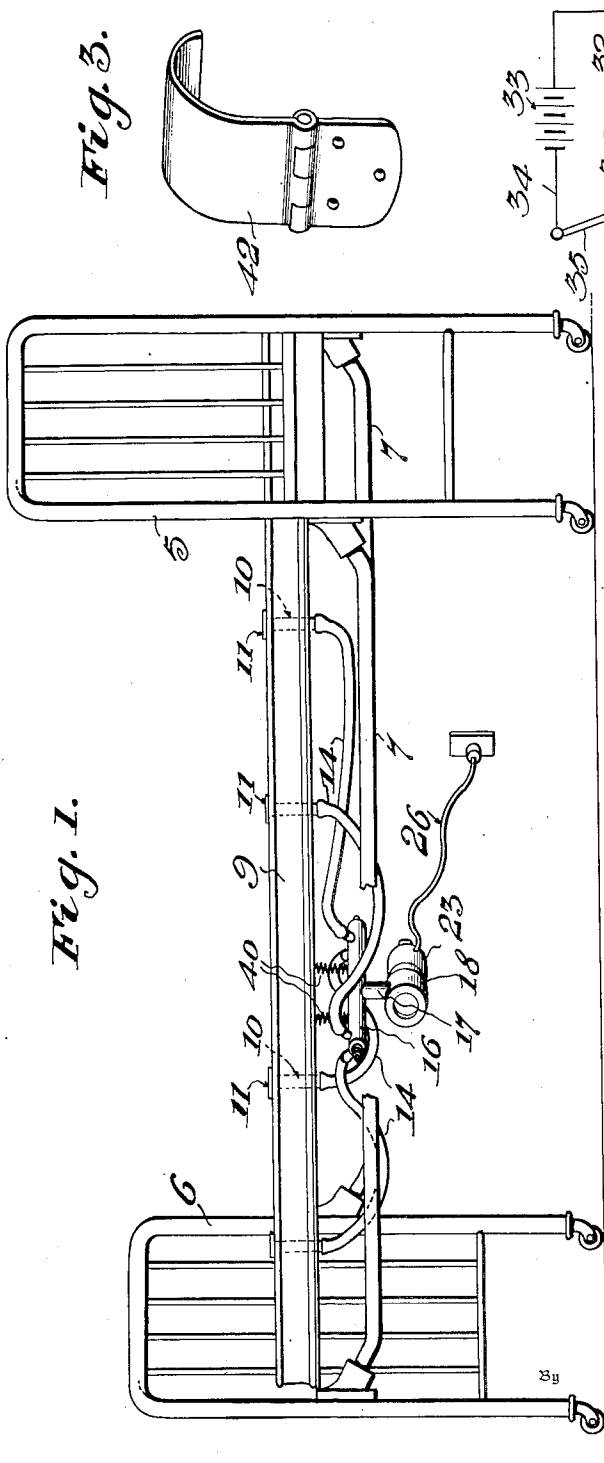
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1,936,960

HEALTH MATTRESS

Filed Feb. 6, 1933

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

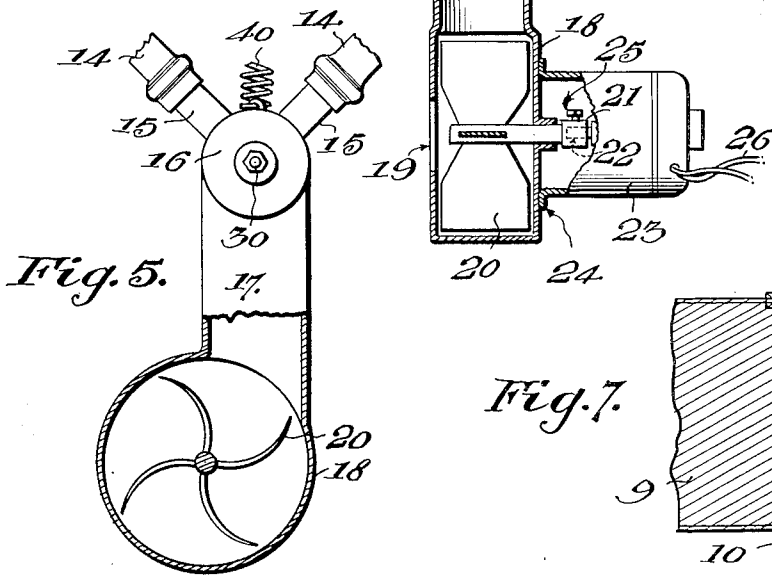
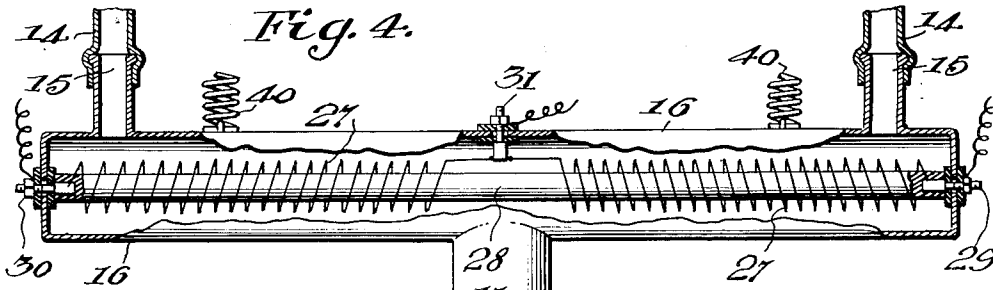


Fig. 5.

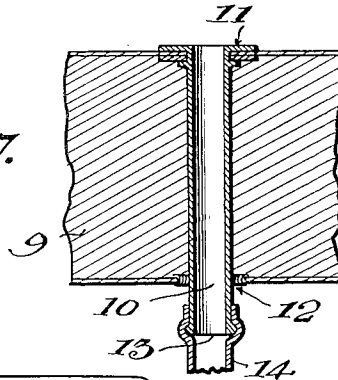


Fig. 7.

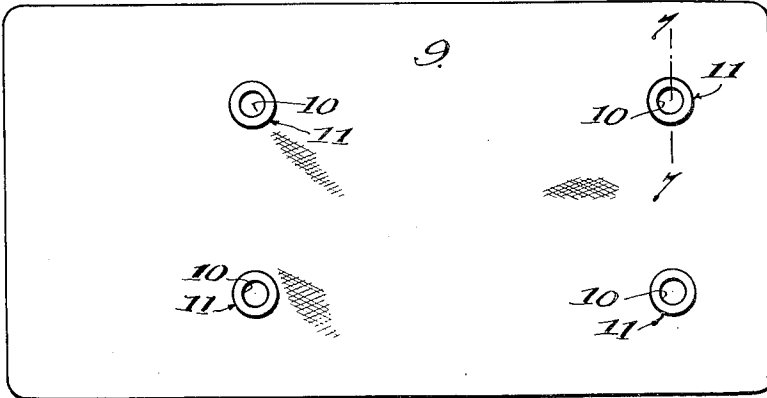


Fig. 6.

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# UNITED STATES PATENT OFFICE

1,936,960

## HEALTH MATTRESS

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Application February 6, 1933. Serial No. 655,499

3 Claims. (Cl. 5—347)

The invention relates generally to mattresses and primarily has for an object to provide a novel mattress wherein is provided means for administering air to the bed clothing covered space immediately above the mattress, thus enabling the body of an occupant of a bed to breathe as intended by nature.

While adaptable to ordinary use my invention will be found very beneficial in the treatment of tubercular patients since medical science now recognizes the fact that it is almost as essential to provide for the breathing of fresh air through the skin of a patient as it is to provide for an adequate supply of fresh air to the lungs. My improved mattress meets this demand by providing a constant and steady supply of fresh air under the bed clothing and in direct contact with the patient at all times.

The invention further resides in the provision of a novel simple and compact air distributing unit and means to support it directly on the bed beneath and in connection with the mattress.

Another object of the invention is to provide novel means for conditioning the air before it is distributed.

Another object of the invention is to provide novel means for supporting the air distributing unit in a manner eliminating noise.

Another object of the invention is to provide novel means for encasing the air distributing unit.

With these and other objects in view which will more fully appear, the nature of the invention will be more clearly understood by following the description, the appended claims, and the several views illustrated in the accompanying drawings.

In the drawings:—

Figure 1 is a somewhat diagrammatic perspective view illustrating the invention,

Figure 2 is a vertical cross section of a bed equipped with the invention, a unit encasing cabinet being shown supported on the bed rails,

Figure 3 is a detail perspective view of one of the cabinet supporting members,

Figure 4 is a side elevation of the air distributor unit, parts being broken away and in section,

Figure 5 is an end view of the unit shown in Figure 4, parts being broken away and in section,

Figure 6 is an inverted plan view of the mattress per se,

Figure 7 is a detail vertical section taken on the line 7—7 on Figure 6,

Figure 8 is a diagrammatic view illustrating one simple means of connecting the heater coils

to enable control of the temperature of the air.

In the drawings, I have illustrated the invention applied to a bed having the usual head and foot frames respectively designated 5 and 6 and which are joined by the usual side rails 7. The bed includes the usual springs 8 and the mattress 9 supported thereon. The mattress may be of any conventional form except for the provision of the air distributing tubes which will be described hereinafter.

At a suitable number of points (four being shown in the drawings), the mattress is apertured to receive hollow air distributor tubes 10, said tubes being flange secured as at 11 to the upper ticking of the mattress and passing freely through the lower ticking of the mattress as indicated at 12. If desired the ticking apertures which accommodate the tubes may be button-holed or otherwise reinforced. Each of the tubes 10 is provided at its lower end with a mounting bead 13 to receive an end of a flexible distributor tube or hose length 14. These distributor tubes are preferably formed of flexible metal tubing covered with asbestos. From the point of connection of the tubes or conduits 14 with the distributor tubes 10, said conduits extend toward a central point where they are removably connected to individual mounting nipples 15 projecting from an air distributor manifold 16 as indicated in Figures 1 and 2 of the drawings.

The manifold 16 forms a part of an air distributor unit and includes a depending throat 17 which forms the discharge outlet of a blower comprising a casing 18 having a central intake 19 and in which a blower fan 20 is rotatably mounted. The fan 20 includes a hub 21 for removably receiving the drive shaft extension 22 of an electric motor generally designated 23 and which may be directly connected to the blower casing as indicated at 24. A set screw 25 or other suitable securing means may be employed to secure the shaft 22 and hub 21 in driving relation. Current for the motor may be supplied through the usual core and plug equipment 26.

In cold weather it may be found desirable to preheat the air before distributing it through the tubes 10. For this purpose, I provide a resistance coil 27 formed in two end sections or portions and supported on a mica bar 28 within the manifold 16. At the respective ends of the manifold the coil 27 connects with individual contacts respectively designated 29 and 30, and intermediate its ends the coil has connection with a contact 31. By reason of the provision of the individual coil end portions, it is possible to

utilize the whole or a part of this resistance unit for heating purposes so as to control the degree of heat imparted to the air to be distributed.

Various means may be employed for utilizing all or a portion of the heat generating quality of the coil 27 and the diagrammatic illustration in Figure 8 is to be considered as illustrative of but one such arrangement. In Figure 8 the contact 29 is shown as connected by a wire 32 with a battery 33 or other source of electrical energy which is in turn connected by a wire 34 with a 3-way control switch 35. The switch 35 is optionally engageable with one or the other of a pair of spaced contacts 36 and 37, the former of which is connected as at 38 with the intermediate contact 31 and the latter of which is connected as at 39 with the end contact 30. From this illustration, it will be obvious that when the switch 35 is in engagement with the contact 36 the left hand end portion alone of the coil 37 will be energized whereas when said switch is moved to engagement with the contact 37 the whole length of the resistance coil 27 will be utilized.

It will be observed by reference to Figures 1 and 2 of the drawings that the manifold 16, the blower 18, 20, and the motor 23 comprise an air distributing unit. This unit is supported by and beneath the bed through the medium of coil springs 40 which connect at their respective ends with the manifold 16 and with the mattress 9. This manner of supporting the distributor unit directly from the mattress effectively serves to eliminate noise incident to the operation of the unit. Furthermore by reason of the loose or telescopic mounting of the tubes 10 and the flexible nature of the conduits 14, movements of the patient in the bed will have no effect upon the efficient operation of the apparatus.

If desired the distributor unit may be encased in a metal cabinet 41 removably suspended from the bed rails 7 by hooks 42 as indicated in Figures 2 and 3 of the drawings. The cabinet may be provided with one or more doors 43 through which access to the interior thereof may be had.

It will be obvious that in operation the distributor unit effectively serves to deliver a steady

and constant supply of fresh air through the tubes 10 into the space immediately above the mattress and usually covered by the bed clothing. In the summer time it may be found desirable to cool the air prior to its distribution and this may be accomplished by supplying the cabinet 41 with ice 44 or any other suitable air cooling medium. It may also be found desirable to distribute with the air a suitable medicated vapor and for this purpose a suitable medicament generally indicated at 45 may be mounted in the cabinet so that the medicated vapor thrown off thereby may be picked up by and discharged with the air.

It is of course to be understood that the details of structure and arrangements of parts may be variously changed and modified without departing from the spirit and scope of my invention.

I claim:—

1. The combination of a bed including a mattress, distributor tubes extending through the mattress, an air distributor unit including a blower and a motor having air delivery connections with the tubes, and coil springs for suspending the unit directly from said mattress.

2. The combination of a bed including a mattress, distributor tubes extending through the mattress, an air distributor unit including a blower and a motor having air delivery connections with the tubes, and coil springs for suspending the unit directly from said mattress, said tubes being secured to the mattress at their upper ends and passing freely through the mattress at their lower ends.

3. The combination of a mattress, tubes forming conduits through the mattress secured at their upper ends to the mattress and passing freely through the mattress at their lower ends, an air distributor unit for delivering air through the tubes comprising a motor, a blower driven by the motor, a manifold into which air is delivered by the blower and having mounting nipples corresponding in number to the tubes, a flexible conduit connecting each nipple with a tube, and coil spring means for directly suspending the unit from the mattress.

ABRAM HITE BOWMAN.

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