May 22, 1928. 1,670,658

F. A. GARBUTT

COOLING DEVICE FOR BEDS

Filed Dec. 1, 1923

Fig. 1.

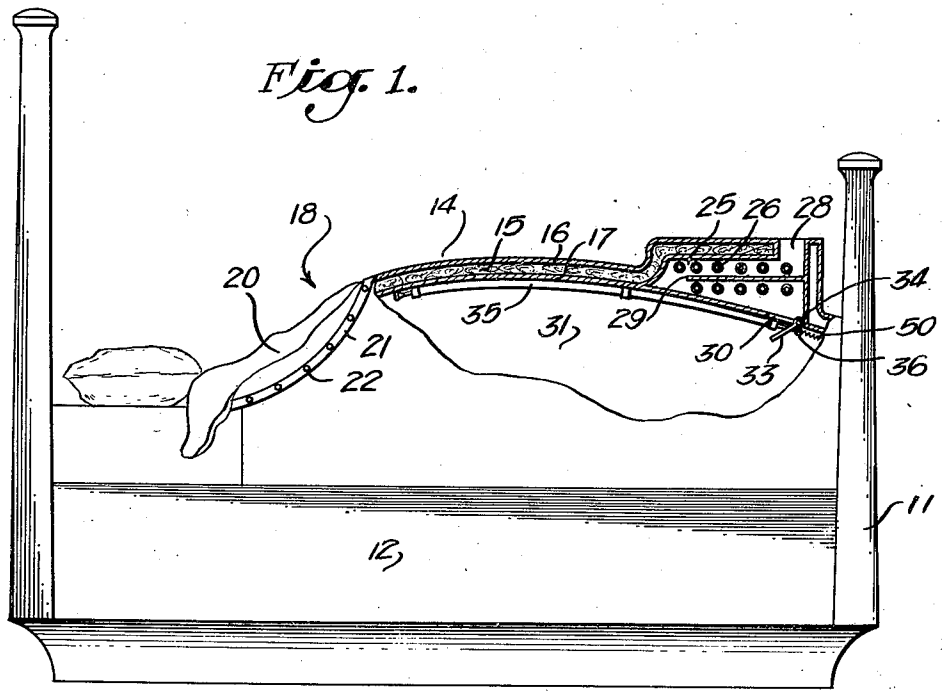
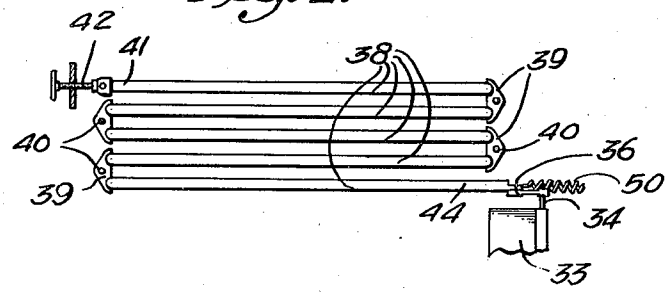



Fig. 2.




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# UNITED STATES PATENT OFFICE.

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## COOLING DEVICE FOR BEDS.

Application filed December 1, 1923. Serial No. 677,954.

This invention relates to beds and relates particularly to a bed having certain features incorporated therewith which contribute to the comforts of the user.

In certain localities, the execessive heat and oppressive humidity of summer nights makes sleep in any degree of comfort an impossibility.

It is the principal object of the invention to provide a bed equipped to be maintained at a temperature low enough to conduce comfortable and restful sleep. The control of temperature is accomplished by a cooling medium, such as refrigerated coils, and means for controlling a flow of air from said coils to the interior of a sleeping chamber.

It is also an object of the invention to provide a thermostatic control for regulating the temperature of the bed.

Further objects of the invention and additional advantages will be made evident hereinafter.

Referring to the drawing which is for illustrative purposes only,

Fig. 1 is an elevational view, partially in section of a bed embodying the essentials of my invention.

Fig. 2 is a diagrammatic view showing the thermostatic control employed in the bed.

In the drawing, 11 represents a bedstead consisting of a body structure 12 which encloses the customary spring and mattress. The spring and mattress, being of the standard form and construction, are not shown. Placed on the body structure 12 is a rigid canopy 14, which may be insulated as shown, the insulation material 15 being placed between the walls 16 and 17. The head end of the canopy 14 is formed with an opening 18, by which the user of the bed may enter and is provided with a flexible closure member 20 which may be in the form of a short blanket as shown, the member being fastened to the canopy at 21 by suitable means such as tacks 22.

At the foot end of the canopy 14 is located an air cooling chamber 25 in which a refrigerating coil 26 is placed, through which coil a suitable refrigerant flows, cold brine being most suitable for this purpose. Air may enter the chamber 25 through the opening 28, passing around the baffle plate 29 and through the opening 30 into the interior of the canopy. The air in passing through the chamber 25 is brought into contact with the cold coils 26 and, therefore, by the time it reaches the opening 30, is considerably lower in temperature than is the outside air. The amount of cooled air passing through the opening 30 is controlled by a damper 33 which is mounted on a shaft 34 and which is adjusted, to allow the appropriate amount of air to enter, by a thermostatic control 35 through the lever arm 36.

The thermostatic control 35 consists, as shown in Fig. 2, of a number of rods 38 which are very sensitive to temperature changes and which will readily expand or contract in accordance therewith, hard rubber being a very suitable material for this purpose. The rods 38 are connected to floating levers 39 which are pivoted at 40 as shown, the end 41 of the first rod being connected to an adjustment screw 42 and the end 44 of the last rod being connected to the lever arm 36. Owing to the fact that the chain of rods 38 are anchored at one end to the adjustment screw 42 any expansion or contraction thereof must be expressed by movement in the end 44, resulting in a corresponding movement of the damper 33. In other words, a rise in temperature inside the canopy results in the moving of the damper to allow more cold air to enter through the opening 30 and a lowering of the temperature results in moving the damper to allow less cold air to enter. The screw 42 may be adjusted so that any temperature within the canopy may be procured. The spring 50 tends to hold the damper open at all times.

From the foregoing, it will be seen that sleeping may be made comfortable even on a very hot night, by the use of this bed. The user is protected from the liability of catching cold owing to the sudden change of temperature which generally occurs during the night because of the fact that the interior of the canopy is automatically controlled and an even temperature thereby provided.

I claim as my invention:

1. A cooling device for a bed comprising: a rigid cover member fitting closely about the sides and foot of the bed and having an opening through which the body of a person lying on the bed may project; and a flexible cover arranged to close said opening, said flexible cover draping over and around the upper part of said person, said rigid cover member having a cooling chamber formed therein, and said chamber being provided with a cooling coil adapted to receive

a circulated liquid and with an inlet opening and an outlet opening so disposed as to permit the circulation of air about said cooling coil and into the space between said bed and said cover member.

2. A cooling device for a bed comprising: a rigid cover member fitting closely about the sides and foot of the bed and having an opening through which the body of a person lying on the bed may project; and a flexible cover arranged to close said opening, said flexible cover draping over and around the upper part of said person, said rigid cover member having a cooling chamber formed therein, and said chamber being provided with a cooling coil adapted to receive a circulated liquid and with an inlet opening and an outlet opening, so disposed as to permit the circulation of air about said cooling coil and into the space between said bed and said cover member, said outlet opening being provided with a damper and means for manually actuating said damper.

3. A cooling device for a bed comprising: a rigid cover member fitting closely about the sides and foot of the bed and having an opening through which the body of a person lying on the bed may project; and a flexible cover arranged to close said opening, said flexible cover draping over and around the upper part of said person, said rigid cover member having a cooling chamber formed therein, and said chamber being provided with a cooling coil adapted to receive a circulated liquid and with an inlet opening and an outlet opening so disposed as to permit the circulation of air about said cooling coil and into the space between said bed and said cover member, said outlet opening being provided with a damper and means for thermostatically actuating said damper.

4. A cooling device for a bed comprising: a rigid cover member fitting closely about the sides and foot of the bed and having an opening through which the body of a person lying on the bed may project; and a flexible cover arranged to close said opening, said flexible cover draping over and around the upper part of said person, said rigid cover member having a cooling chamber formed therein, and said chamber being provided with a cooling coil adapted to receive a circulated liquid and with an inlet opening and an outlet opening, so disposed as to permit the circulation of air about said cooling coil and into the space between said bed and said cover member, said outlet opening being provided with a damper and means for thermostatically and manually actuating said damper.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 21 day of November, 1923.

FRANK A. GARBUTT.