No. 811,094. PATENTED JAN. 30, 1906.

W. ROBERTSON.

MATTRESS.

APPLICATION FILED OCT. 17, 1904.

2 SHEETS—SHEET 1.

Fig. 1

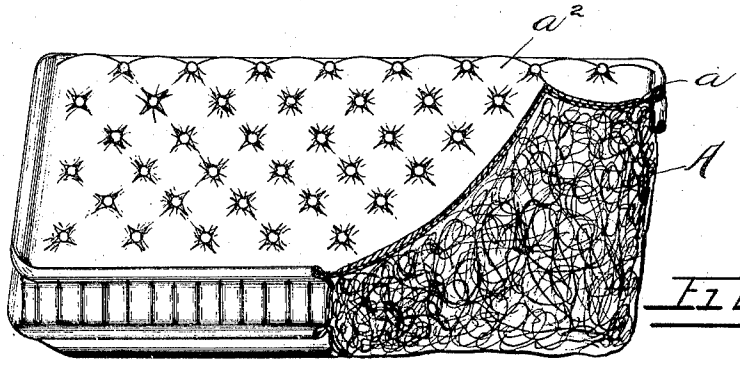


Fig. 4

Fig. 2

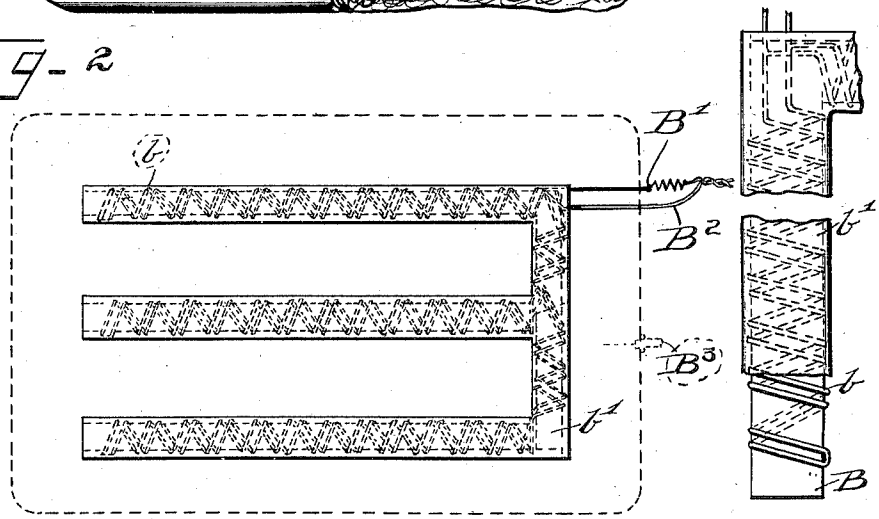
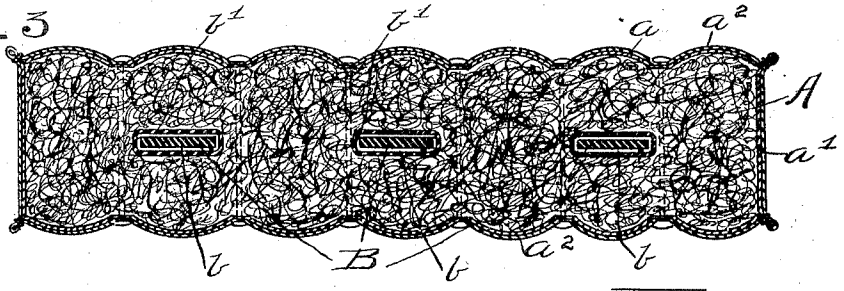


Fig. 3



Witnesses
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2 SHEETS—SHEET 2.

Fig. 5

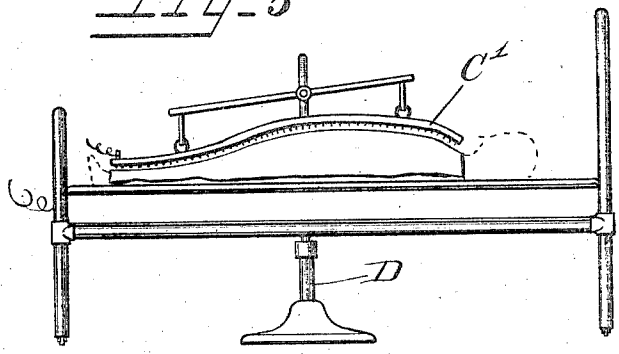


Fig. 7

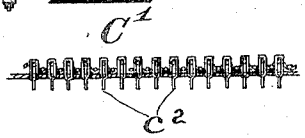


Fig. 6

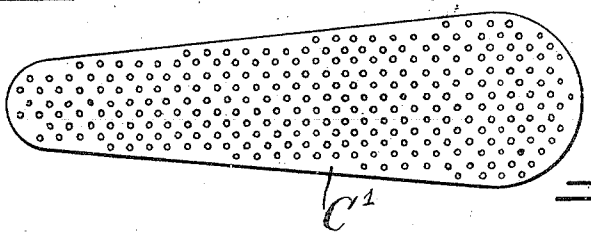


Fig. 9

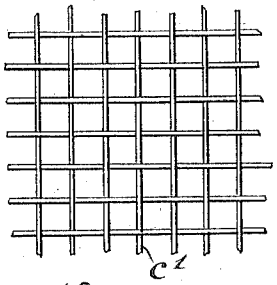


Fig. 8

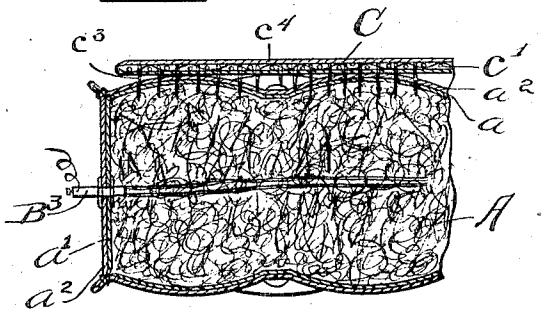
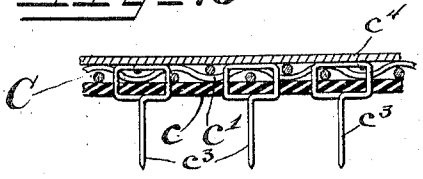


Fig. 10



Witnesses

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UNITED STATES PATENT OFFICE.

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No. 811,094. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed October 17, 1904. Serial No. 228,842.

To all whom it may concern:

Be it known that I, WILLIAM ROBERTSON, a subject of the King of Great Britain, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mattresses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in mattresses, and more particularly to incombustible mattresses constructed of resilient metal fibers, such as steel wool.

Heretofore many kinds of vegetable and animal fibers have been used for filling mattresses and when new such possess considerable resiliency. After a longer or shorter period of use, however, the fibers become permeated with the exhalations from the body and owing to their porous nature become a frequent cause of disease and a constant menace to the health of the users. Furthermore, the fibers become broken up and even reduced to a fine dust, which sifts out into the atmosphere, endangering health. The slow decay of such fibers also adds to the danger, and it is a well-known fact that such mattresses not only become filled with bacteria, but also likely to contain vermin.

The object of the invention is to provide a mattress of great and permanent resiliency and practically indestructible and in which the filling is of an incombustible non-absorbent material, not subject to cutting or breaking in use and not capable of harboring bacteria and vermin.

It is also an object of the invention to provide a mattress of electrically-conducting material and also adapted to admit of warming by means of an electric current or otherwise, whereby a desired and uniform temperature can be maintained.

It is a further object of the invention to afford means for applying electrical treatment without inconvenience to or the necessity for moving a patient from his bed.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a perspective view, partly broken, of a mattress embodying my invention. Fig. 2 is a diagrammatic view illustrating one method of applying heat thereto. Fig. 3 is an enlarged transverse section of a mattress embodying my invention. Fig. 4 is an enlarged fragmentary detail of a part of one of the resistance-coils. Fig. 5 is a side elevation of a device embodying my invention, showing one method of applying electrical treatment. Fig. 6 is a plan view of one of the contacts. Fig. 7 is an enlarged fragmentary section of the same. Fig. 8 is an enlarged fragmentary section of the mattress, showing the lower contact-piece in place. Fig. 9 is an enlarged fragmentary plan view of the wire net shown in Figs. 7, 8, and 9. Fig. 10 is an enlarged fragmentary section of the lower contact.

As shown in said drawings, a central mass of fine long metallic shavings A, such as steel wool, is shaped to the form of a mattress, as shown in Figs. 1 and 3, and on top and bottom, side and ends of which is provided one or more comparatively thin layers a a' of absorbent material, such as felt or other suitable material, and the whole is inclosed, as is usual, in an investing fabric, such as ticking, (indicated by a^2,) and tufted or otherwise finished. For the purpose of warming the mattress one or more resistance-coils are embedded therein at its center, as shown in Figs. 2 and 3, each of which comprises an electrical conductor (indicated by b) wrapped about a non-conducting or insulating core B and inclosed in a non-conducting and non-inflammable material, such as asbestos, (indicated by b'.) As shown, three of said resistance-coils are employed, though obviously a greater or less number may be used, and each extends longitudinally of the mattress at its center and near each side of the same, and, as shown, each is connected with the conductors B' and B^2, adapted to be connected with any source of electric supply.

In employing the mattress for electrical treatment a conductor B^3 is extended through the fabric and into the mass of steel wool to near the center of the mattress and a contact or conducting sheet C of any suitable material is laid upon the mattress and provided with metallic points which extend through the ticking a^2 and felt a into contact with the steel wool within. As shown, said conductor-sheet comprises a flexible sheet c, of rubber, upon which is secured a sheet c', of fine wire net, and the pins c^3 extend through the net and rubber sheet and project sufficiently to

extend down into the steel wool when laid upon the mattress, as shown in Fig. 8. A thin sheet of fabric c^4 is then moistened and spread over said contact or conductor C, and upon this the patient lies. Above the patient is supported a conductor C′, constructed similarly to the conductor C and provided with combs or short points c^2, which extend into proximity with the body of the patient or the parts thereof to be treated. A binding-post D is connected with said conductor C′, adapted for connection with one of the conductors from any suitable source of current—as, for instance, a static machine—while the other conductor is connected with the conductor B^3 of the mattress.

The operation is as follows: The mattress, owing to the great resiliency of the steel wool and its imperishable qualities, maintains its resiliency and form indefinitely and owing to the presence of the thin absorbent layer of felt or other suitable material investing the same affords a very soft comfortable bed not subject to deterioration. Should it be desired—as, for instance, in treating the sick—to maintain a uniform temperature for a period of time, it can be readily accomplished by means of the resistance-coils contained therein, which, however, being flexible and embedded centrally in the mattress are in no wise objectionable. Should it be desired to treat the patient by means of electricity, the current from one conductor may be connected into the mattress, as before described, or directly with the conductor C and the other with the conductor C′ and the electricity supplied by any suitable electrical machine or other source of current. In this manner the entire person may be placed in circuit and subjected to electrical action, or any portion of the same may be so treated and the current may be applied for any desired length of time without necessitating moving the patient. Inasmuch as the surface exposed is very large, current of considerable strength may be applied without inconvenience and even while the patient is sleeping.

Obviously my invention is adaptable for ordinary use as a bed and for electrical treatment, and the same may be constructed of various forms, and many details of construction and application may be varied, without departing from the principle of my invention. I therefore do not purpose limiting this application otherwise than necessitated by the prior art.

I claim as my invention—

1. A mattress comprising a core consisting wholly or in part of electrically-conducting material, a layer of fabric such as felt inclosing said material, a covering fabric investing the same, and an electrical conductor embedded in said conducting material.

2. A mattress comprising a central mass of fine resilient long metal shavings, a thin layer of felt covering the same, an investing fabric such as ticking affording a cover, an electrical conductor in contact with said shavings, and means projecting through the investing material adapted to convey electricity to the patient treated.

3. A mattress comprising a central mass of incombustible conducting material, an inclosing fabric therefor, an electrical conductor extending through said fabric into said material, a conducting-sheet and a plurality of points thereon adapted to project into said material.

4. A mattress comprising a filling consisting wholly of non-combustible, electrically-conducting material, and means for passing an electric current through said material.

5. A mattress comprising a central core of non-combustible electrical conducting material, an absorbent covering therefor, a tick inclosing said material and covering, an electrical conductor embedded in said material and projecting through the tick, a conducting-sheet and a plurality of contact-points thereon adapted to project through the tick into said conducting material.

6. In a device of the class described the combination with a central core of metallic shavings, of a covering therefor, an electrical conductor embedded in said shavings and projecting through said coverings, a plurality of electrical conductors adapted to project through the covering into contact with said shavings and a flexible sheet having a plurality of points thereon and suspended above said core.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

WILLIAM ROBERTSON.

Witnesses:
W. W. WITHENBURY,
H. S. RUDD.