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MATERIAL FOR ARRESTING SOUNDS AND
HOLDING WARMTH
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Fig. 1.

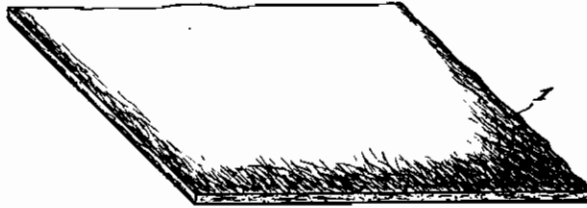


Fig. 2.



Fig. 3.

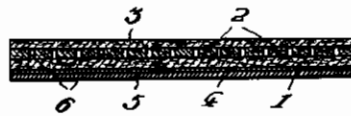
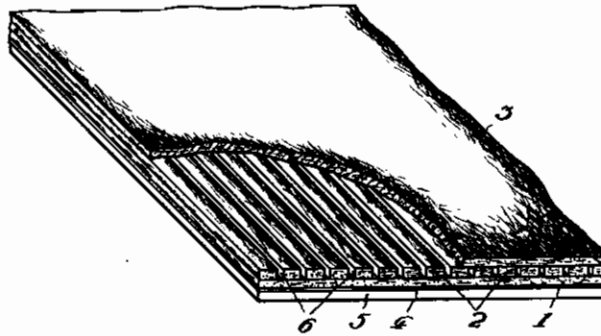


Fig. 4.



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MATERIAL FOR ARRESTING SOUNDS AND HOLDING WARMTH

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This invention relates to a material for arresting sounds and holding warmth consisting in that, between the two deer-hair plates which are prepared from straight deer hairs combined each other in immersing and pressing them in a solution of resin mixed with a small quantity of rubber latex, strips of the same deer-hair plate are arranged in a row at small and same intervals and stuck to the plates, one surface of the formed triple deer-plate having a strong paper stuck with a thick layer of mixed adhesives of sodium silicate, casein and a small quantity of rubber latex.

The object of my invention is to obtain a light and effective material for arresting sounds and holding warmth, which is prepared from porous and light deer-hairs in several different layers so as to absorb all sorts of sounds, and which is recommendable for such conveyors as trains, airplanes, motorcars etc. I have specially chosen the deer-hair to be the raw material for the present invention, because the deer-hair abounds in hollows and is far lighter than other animal fibres.

The deer-hairs used in the present invention must not be curled and must be washed beforehand in a solution of caustic alkali and also treated with such a fire-proof solution as sulphate of ammonia, phosphate of ammonia or boric acid. According to my invention, the treated deer-hairs are, after drying, levelled to a layer, and, immersing and pressing the layer in a solution of resin mixed with a small quantity of rubber latex, a porous and light deer-hair plate is obtained. Between the two deer-hair plates thus obtained, strips of the same plate are arranged in a row at small intervals and stuck to the plates on both sides of the individual strips, one surface of the formed triple deer-hair plate having a strong thick paper stuck with a thick layer of mixed adhesives of sodium silicate, casein and a small quantity of rubber latex. The construction of the invention is illustrated in the accompanying drawing, in which

Figs. 1 and 2 are diagonal views of deer-hair plates and strips manufactured according to the foregoing method; Fig. 3, a partly sectioned diagonal view of the material for arresting sounds and holding warmth according to the present invention.

1 is a porous and light deer-hair plate manufactured in immersing and pressing non-curved straight deer-hairs in a solution of resin mixed with a little of rubber latex. 2 is strips of the said plate. The strips 2 are inserted between and stuck to the two deer-hair plates 1 and 3 at small and same intervals 6. On one surface of the formed triple plate, a strong thick paper 5 is stuck with a thick layer 4 of mixed adhesives of sodium silicate, casein and a small quantity of rubber latex.

In the present invention, high frequency sounds are mostly absorbed by the triple deer-hair plate consisting in adhering hollow deer hairs with one another in a spongy form, and remaining sounds are cancelled by their mutual interference in the intervals 6 between the strips 2. The layer of adhesives 4 such as sodium silicate and casein and paper 5 which are applied on a surface of the plate not only absorb all or most part of low frequency sounds, but also strengthen the deer-hair plate and make the fitting work of the plate easy when it is in use. Furthermore, as the present invention adopts the hollow and light deer hairs as its main raw material, the product is of very light weight, which is a point most advantageous in case it is used for the sound arresting materials in such moving objects as trains, motor cars, airplanes, etc. Besides, the mixture of rubber latex with other adhesives as well as spaces left between the strips give the product flexibility which facilitates the use of the product on curved walls.

As the product according to the present invention is mainly prepared from the porous deer hairs, it can be used also for the purpose of holding warmth.

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