May 7, 1935. W. D. PARDOE 2,000,416

FELTED ASBESTOS PRODUCT

Filed Jan. 11, 1933

Fig. 1

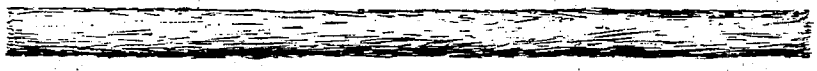


Fig. 2.



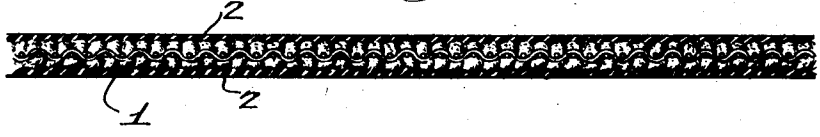
Fig. 3.



Fig. 4.



Fig. 5.



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UNITED STATES PATENT OFFICE

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FELTED ASBESTOS PRODUCT

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Application January 11, 1933, Serial No. 651,079

8 Claims. (Cl. 154—49)

The principal object of this invention is to provide an improved heat-insulating material in the form of felted fabric, said material being adapted for general insulation purposes and being well suited for use as a wear-resisting and heat-insulating mat for the floors of automobiles.

While it has previously been proposed to form felted fabrics incorporating asbestos, no fabric of this type has been produced commercially having sufficient inherent strength and durability to permit its use as a floor covering or in places where it is subjected to any substantial wear.

The insulating properties of asbestos products of all sorts is well understood, but asbestos felts, due to their lack of strength and lack of resistance to wear have necessarily been restricted to uses where these characteristics are not essential. I have discovered means for producing an asbestos felted product having considerably greater resistance to wear than the prior products of like general character; and more specifically, I have produced a floor covering well adapted for use in automobiles which utilizes for the first time in an article of this character the relatively high insulating properties of asbestos.

In accordance with my invention, I first produce on cards or garnetts a bat or lap of clean asbestos fibre, this bat or lap being of any desired weight and thickness. While I prefer to employ asbestos fibres alone in the production of this bat, it will be apparent that varying percentages of hair, jute or other suitable fibers may be introduced if desired without departure from the invention.

I now treat the bat or lap produced as described above by spraying or impregnating it with a thin solution of rubber latex, rubber cement or other suitable binder preferably possessing waterproofing characteristics. Rubber latex solution has been found well suited for this purpose, and a 30% solution has been found satisfactory.

The treated bat after being dried is then passed through a needle punching loom or similar machine together with a woven base fabric, the fibres of the bat being forced in this operation into and through the fabric so that the lap is thoroughly incorporated and mechanically bonded with the fabric and forms on the surface of the latter a felted mass of the asbestos fibres interlocked with the strands of the base fabric. Many different kinds of base fabric may be employed, although I prefer to use a fabric of woven asbestos. I have found that rubber latex or other binder used on the fibres has the effect of materially strengthening the resultant fabric giving the felted mass a body which it otherwise lacks and producing a stronger interlock or bond between the fibres of the bat and the base fabric.

The resultant product is well suited for many insulating purposes and has sufficient inherent strength and wear-resisting properties to permit its being used in places in which it is subjected to considerable wear. For use as a floor covering, however, where the wear placed upon the product is heavy, I prefer to coat one or both sides of the product previously described with rubber which subsequently is vulcanized, this vulcanized rubber forming a surface on one or both sides of the fabric which is well able to withstand considerable heavy frictional wear preventing disintegration of the fabric under heavy use. When thus provided with a rubber surface, the product loses none of its insulating properties and is thereby well adapted for use on the floors of automobiles where it is desired to insulate the interior of the automobile body from the heat generated under the hood and behind the floor boards.

Instead of a surface coating of vulcanized rubber, I may employ other wear-resisting binders applied either to the surface or impregnating the entire fabric. I may, for example, run the fabric through a solution of starch or sodium silicate to give the fabric the necessary strength and durability to withstand abrasive wear without disintegration.

In the attached drawing:

Figure 1 is an edge view of the bat representing an initial step in the manufacture of my improved product;

Fig. 2 is a similar view showing the bat treated in accordance with the second step of my process;

Fig. 3 is a like view showing the finished product;

Fig. 4 shows a further embodiment of my invention, wherein as previously described the article is coated on one side with rubber or other surfacing material, and

Fig. 5 shows the product of Fig. 3 provided with a rubber or other surface on both sides.

With reference to Fig. 3, the base fabric with which the bat shown in Fig. 2 is combined, as previously described, is indicated by the reference numeral 1; and in Figs. 4 and 5, the reference numeral 2 indicates the rubber or other surface coating.

I claim:

1. As a new article of manufacture, a felted asbestos product consisting of a base fabric and fibres of asbestos coated with a plastic binder and

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mechanically interlocked with and overlying a face of said fabric.

2. As a new article of manufacture, a felted asbestos product consisting of a base fabric and latex-coated fibres of asbestos interlocked with and overlying a face of said fabric.

3. As a new article of manufacture, a felted asbestos product consisting of a base fabric and a bat of asbestos fibres impregnated with a plastic binder and interlocked with said fabric.

4. As a new article of manufacture, a felted asbestos product consisting of a base fabric of woven asbestos and a rubber-impregnated bat of asbestos fibres mechanically interlocked with said fabric.

5. As a new article of manufacture, a felted asbestos product consisting of a reinforcing base fabric, a bat of asbestos fibres overlying a face of and interlocked with said fabric, and a plastic binder bonding the fibres of said bat together and to the base fabric.

6. As a new article of manufacture, a felted asbestos product consisting of a base fabric, fibres of asbestos interlocked with and overlying a face of said fabric, and a surface of cured rubber bonded with said fibres and forming a wear-resisting surface.

7. As a new article of manufacture, a flexible rubber mat having secured to one side thereof a felted asbestos product consisting of a base fabric and asbestos fibres mechanically interlocked with said fabric.

8. A floor covering comprising a felted asbestos sheet and a flexible rubber wearing surface.

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