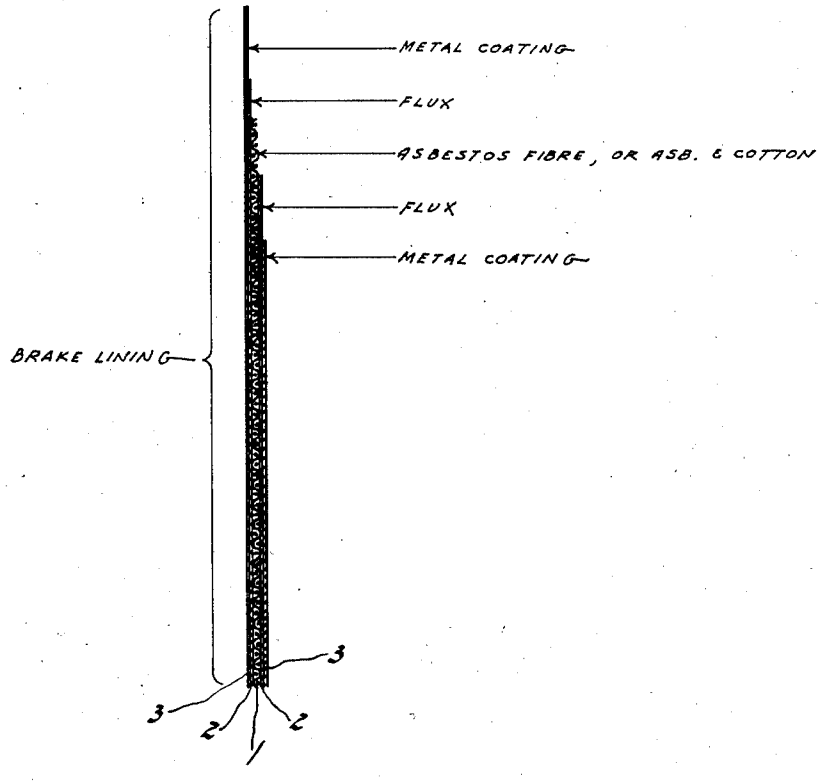
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FRICTION MATERIAL

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FRICTION MATERIAL

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This invention relates to brakes and clutches used on automotive vehicles and particularly to the lining therefor.

In the past it has been customary to compose the brake and clutch lining of a base of fibrous material and impregnate this fibrous material with a suitable filler, the compound used for the filler usually being a hydrocarbon. In the present invention it is proposed to use the same fabric or fibrous base but to impregnate it with a metal instead of the hydrocarbon compounds heretofore used.

In the present invention the fibrous material or fabric composed of individual strands and constituting the base is preferably of asbestos and may have a flux composed of a metallic salt applied thereto and afterward immersed in a bath of molten metal. This will give a filler of metal through the interstices of the fibrous base. The material may later be compressed if desired.

Instead of the method above described we may coat the individual strands of the fibrous material with metal before they are woven into the fabric. After the weaving operation the material may be sintered to cause the adjacent strands to adhere together, after which a rolling or pressing operation may be advisable.

A third method of forming our improved brake lining is to coat the threads (which constitute the fabric base) with a sheathing of metal by electrolysis. After the threads are thus coated they may be woven into the band and then the whole sintered to cause adherence between the adjacent threads. A pressing or rolling operation may be applied, if thought desirable.

A further method is to coat the fabric, or the individual strands before weaving to the fabric, with a powdered metal and after the weaving operation, to sinter the material. A compressing operation may later be performed.

A still further method of producing the finished article is to apply a suitable flux on both sides of the woven fabric and placing a thin layer of metal over the flux and by the application of heat cause the metal to run into the fibres of the fabric. A pressing or rolling operation may again be used.

In each instance the pressing or rolling operation may be performed between heated surfaces either under the normal atmospheric temperature of the material or while the material is still at a high temperature.

An inorganic material such as graphite, or a hydrocarbon compound, may be entrained in the material either before or after the sintering operation, or immediately before the final pressing or rolling.

One form or embodiment of the invention is disclosed in the figure on the accompanying drawing.

Referring to the numbered parts of the drawing, 1 designates the fabric or fibrous base of the lining material, 2 the flux and 3 the outer coatings of metal, preferably iron. The flux and metal may be applied to but one side, or to both sides as shown in the drawing, but we prefer to apply it to both sides in order to obtain a more intimate intermingly of the molten metal in the interstices of the fibrous material.

When the component parts are assembled in the relation shown in the drawing, heat is applied and the metal 3 caused to flow and run into the interstices of the fibrous base 1.

The material may later be rolled or pressed, either while it is in its heated state, or afterward when it has cooled. The material is then ready for use as a brake lining, or on clutches.

Our improved brake lining is not subject to changing characteristics, such a common and objectionable feature of the existing brake linings. This change in characteristics is due to temperature rise during operation or application of the brake or clutch.

Metallic friction members are noisy and in the present invention it is proposed to make use of the frictional properties of metal, but reduce the noise so that it is no longer objectionable. This we accomplish by causing molten metal to flow into a fibrous or fabric base, preferably of asbestos, and using the finished article as a brake or clutch lining.

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We claim:

1. The method of making a brake lining consisting of using a fibrous base, applying a metal to said base, heating the metal so as to cause it to flow into the interstices of the base, and then pressing or rolling the product.

2. The method of making a brake lining consisting of applying a flux to a fibrous base, then applying a metal over the flux, then in heating the whole so as to cause the molten metal to flow into the fibrous base.

In testimony whereof we affix our signatures.

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