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BRAKE BAND.

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This invention refers to a method of manufacturing brake-band lining and the like containing roughening agents, in order to increase the adhesive and braking properties of such fabrics, and it is particularly intended to devise means to make it possible to manufacture such articles by the usual weaving and fiber or thread-combining processes. In accordance with the previous art the roughening agents, grit, sand or the like, were incorporated with the finished fabric by forcing them into the bands or cloth by means of pressing rollers, calenders or the like, but it is obvious that by this means the grit-retaining capacity of the fabric is but very limited; besides, there is the drawback that by the impressing of the roughening agents the material of the fabric is injured, so that its durability and its resistance to tensional stress is reduced to a minimum.

Now, in accordance with my invention a superior and highly satisfactory product of the kind referred to is obtained by first incorporating the grit, finely granular, and preferably sifted sand, fine iron filing or comminuted chips or parings from the treatment of cast iron and the like with the threads or the thread-constituting fibers of organic as well as mineral fibers and then submitting them to the usual weaving process.

The treatment may commence in the ropery or in the spinning process, the several constituting threads, slubbings or fibers being caused to pass through a supply of impregnating mucilage or glue or other adhesive agent, and being then conducted through a supply of more or less fine sand, grit or any other suitable material, adapted to produce braking or velocity reducing action. After the threads have thus become charged with the roughening agents, they are preferably air-dried and reduced to a so-called semi-limp or semi-withered condition, the manner and duration of such treatment being governed by the number of threads required as well as by the width and the strength of the brake band or fabric desired. The threads obtained may then go onto a suitable spooling beam or spooling machine and in view of the roughening agents being securely retained by the glue or other adhesive the layers of threads will neither adhere to each other, nor will they be injured by the grit or the like with which they have been loaded in this manner. From the spooling device the threads are delivered to a suitable kind of loom the headle eyes of which may be somewhat larger than usual. Inasmuch as the bulk of the roughening agent is contained in the interior of the threads and the walls of the eyes being very smooth there is no danger of sticking of the threads to the eyes or of their being worn out rapidly by contact with the roughening agents contained in the threads.

The bands, ribbons, cloth or other fabric obtained as a result of the weaving operation which contains the roughening and braking agent incorporated in its interior may then, if desired, be submitted to a subsequent treatment with the roughening agent by passing it through a mixture of the impregnating glue or adhesive with the grit, or other roughening agent, the excess of the treating mixture being removed from the fabric in any suitable manner thus for instance by any suitable wiping or scraping instrumentalities.

The superiority of the product obtained is increased by submitting it to a kind of baking process by which means the pores are closed up, so as to prevent absorption of moisture, as is likely to occur in the case of slow drying, which would yield a more porous product. The impregnating adhesive should be such as to resist the action of heat as well as that of water and fats and oils.

It should of course be understood that different kinds of roughening agents besides those hereinbefore mentioned merely by way of exemplification may be used and different manners of applying the adhesive and the roughening agents may be resorted to within the scope and spirit of the invention as defined in the appended claims.

In further pursuance of the invention the finished sheet, band or ribbon may be submitted to a pressing action with the effect that the surface is smoothened without affecting the fabric core, and by a suitable selection of adhesive, glue, tar or the like the grit or the like will be imbedded therein.

I claim:—

1. The method of manufacturing brake bands and the like, which consists in impregnating asbestos threads and the like with an adhesive, causing comminuted grit-like roughening material to adhere to the im-

pregnated threads, air-drying the resulting product, and weaving the product into a textile fabric.

2. The method of manufacturing brake bands and the like, which consists in applying an adhesive to asbestos threads and the like, causing comminuted grit-like roughening material to adhere to the treated threads, air drying the resulting product, weaving said product into a textile fabric, and applying a second charge of adhesive and of roughening agent to the fabric.

3. The method of manufacturing brake bands and the like, which consists in applying an adhesive and grit-like roughening material to asbestos threads and the like, air drying the resulting product, weaving said product into a textile fabric and baking said fabric by heat.

4. The method of manufacturing brake bands and the like, which consists in applying an adhesive and grit-like roughening material to asbestos threads and the like, air drying the resulting product, weaving said product into a textile fabric, applying a second charge of adhesive and of roughening agent to the fabric, and baking said fabric by heat.

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