

UNITED STATES PATENT OFFICE.

EDWARD F. GINGRAS, OF BUFFALO, NEW YORK.

PROCESS FOR MAKING PULLEY COVERINGS.

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This invention relates to an improvement in the process of making pulley covering and more particularly in the process of treating of the cotton fabric type which is used for the covering of pulleys so as to prevent slippage between the pulleys and the belts passing over them.

The general practice followed in making such pulley covering has been to saturate the fabric with oil, rubber or asphaltum so as to give a friction surface. However, such coverings have been found objectionable because, while the oil, rubber or asphaltum in the covering is dry when it is first used, the heat engendered by the passage of the belt over the pulley causes the oil, rubber or asphaltum to soften and exude from the covering thus destroying the friction surface and permitting the belt to slip. These coverings are further objectionable because it has been found impossible to secure them to the pulleys other than by the use of nails or rivets and under the action of the heat, above referred to, the fabric around the heads of the nails or rivets weakens until the covering is not longer securely held to the pulley. It has also been found that when the oil, rubber or asphaltum in the covering has been heated the fabric will stretch and thus become loose on the pulley.

The chief object of this invention is to provide a pulley covering in which all the stretch is taken out and kept out of the fabric and which is not saturated with rubber but is simply given a superficial surface treatment for the purpose of providing a satisfactory friction surface, the amount of rubber thus used being small so that the creation of heat by friction will not have the deleterious effect above referred to. Such a covering, furthermore, may be treated with rubber on one side only, the other side being coated so that the belt can be cemented directly to the pulley, rather than be held solely by the use of nails or rivets. Further objects will appear from examination of the following description:

The belting forming the subject of this invention consists of a woven fabric, preferably of cotton, which is saturated in a gum solution, as for example copal gum dissolved in acetone, and then stretched to the limit of elasticity, and so held until completely dry. The belting so treated will thereafter, of course, be kept at this limit of elasticity by

the hardening of the gum so that it can neither stretch farther nor can it contract.

The gum solution is preferably used cold for, while a gum solution which is liquefied under the action of heat may be used, it has been found that a fabric treated with the latter solution is weakened since the intense heat of this solution tends to have a deleterious effect upon the threads of the fabric.

This treated fabric is then coated with a rubber solution which may be applied in various ways, depending largely upon whether it is desired to coat both sides or one side of the fabric. If both sides are to be coated, the easiest way is to run the belting through a tank containing a rubber solution. If, however, one side is to be coated this solution may be applied with a brush or any other suitable means. Before the rubber solution is applied to the belting it is allowed to stand for a certain period in order to permit the more volatile elements of the gum solution to evaporate.

Instead of following the process above described, a shorter process may be used in which, after the volatile elements of the gum solution have evaporated and before the solution has become entirely dry, the belting is given a surface coating of the rubber solution on one or both sides and then placed under tension approaching its elastic limit and so held until thoroughly dry. The gum solution in the belting after the evaporation has taken place is tacky and unites easily with the rubber solution.

If the first process be followed, it may be taken in two distinct stages at different periods, the stretched and gum saturated belting being stored without deterioration for an indefinite length of time and the second stage, i. e., the rubber surfacing, being carried out when desired.

A pulley covering from such belting, according to either process, contains no oil whatsoever and only a small percentage of rubber so that the objectionable features referred to, which exist in the old pulley covering, are not present.

When used as a pulley covering the face of the pulley is covered by the belting which is either cemented in place or held by nails or rivets, if desired. This belting may be used in the ordinary way for driving machinery, wherever a fabric belt is desired, and by rea-

son of its construction its functions will not be affected by the presence of heat.

Having thus set forth my invention, what I claim as new and for which I desire the protection of Letters Patent is:

The process of treating a fabric belting consisting in saturating the fibers with a gum solution, which, when hardened, will prevent the stretching or contracting of the belting,

allowing the excess moisture to evaporate, coating the surface with a rubber solution, stretching the belting to approximately its elastic limit and holding it under such tension until completely dry.

In testimony whereof I have affixed my signature.

EDWARD F. GINGRAS.